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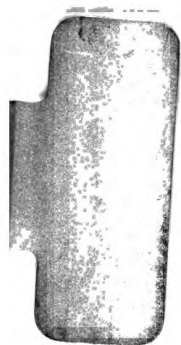


Second Series

THE AMERICAN NUMISMATIC SOCIETY

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12



Second Series, continuing

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OBSERVATIONS ON THE METROLOGY OF THE PRECIOUS METAL COINAGE OF PHILIP II OF MACEDON: THE “THRACO-MACEDONIAN” STANDARD OR THE CORINTHIAN STANDARD?

JAMES A. SCHELL*

A substantial body of evidence, numismatic, literary, and inscriptional, supports the hypothesis that ancient precious metal coins were exchanged at bullion value (Aristotle, *Politics* 1257a; Head 1967:222–228; Bellinger 1963:1). Modern numismatic scholarship has demonstrated that precious metal issues conformed to fineness “standards” and to denominational mass “standards”, permitting transactions to go forward without recourse to assays or to scales (Kraay 1976:8, 329–330; Mørkholm 1991:5). While these standards varied from place to place and time to time, most transactions and conversions required nothing more than a simple table of exchange rates (Kraay 1976:320–322, 329–330). Despite the relative ease of conversion, several considerations, in particular the commissions exacted by money-changers, made the choice of a particular denominational mass standard a matter of some importance (Casson 1994:75). A decision of this magnitude was doubtless the purview of a high official. On accession to the throne of Macedonia in 359 BC, Philip II became head of state, chief

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executive, chief magistrate, commander-in-chief of the army, and high priest. Extant sources report that Philip chose the types for the coinage issued in his name (Plutarch, *Alexander* 4.5). It is probable that he chose the fineness and the denominational mass standard as well (Le Rider 1977:354; Kraay 1976:330).

There is little doubt that Le Rider is correct in his assertion that Philip II adopted the silver stater of the Chalcidian League (c. 14.3 g) as the model for his silver issues (Le Rider 1977:354). The denominational mass system represented by this silver stater has been termed the "Thraco-Macedonian" standard (Le Rider 1977:354; Kraay 1976:330; Troxell 1997:17–18). As Troxell noted, Price has convincingly argued that the silver stater of Philip was a pentadrachm stater; hence, the small coins known as "fifths" are, in fact, drachms (Le Rider 1977:360; Price 1991:38–40; Troxell 1997:56 n. 2). Further, Troxell states that the par mass of the "fifth of a tetradrachm" is c. 2.86–2.88 grams (Troxell 1997:56). A drachm of c. 2.86–2.88 g forms the basis for the denominational mass standard employed by Corinth and her colonies (Kraay 1976:329). Such a drachm is generally known as a Corinthian drachm. The differences between the theoretical mass of the Corinthian drachm (c. 2.86 g) and the observed masses of Philip's "fifths" (early: c. 2.74 g, late: c. 2.49 g) are no more than the usual discrepancy observed in fractional issues (Troxell 1997:56; Kraay 1976:8). In passing, the general tendency of mass standards to decline over time can be discerned in these issues (Mørkholm 1991:8). Plots of the specimens listed by Le Rider (1977:5–252) are shown in comparison with the expected units on the Corinthian standard in Figures 1 to 4.¹

The author is acutely aware of several small emissions of half staters, quarter staters, and eighth staters (termed didrachms, drachms, and hemidrachms by Le Rider); he speculates that these issues were limited, ad hoc strikings whose *raison d'être* is now obscure. While such an interpretation leaves much to be desired, the available evidence admits no other parsimonious interpretation.

¹ The metrological analyses from which these values were derived are available upon request from the author.

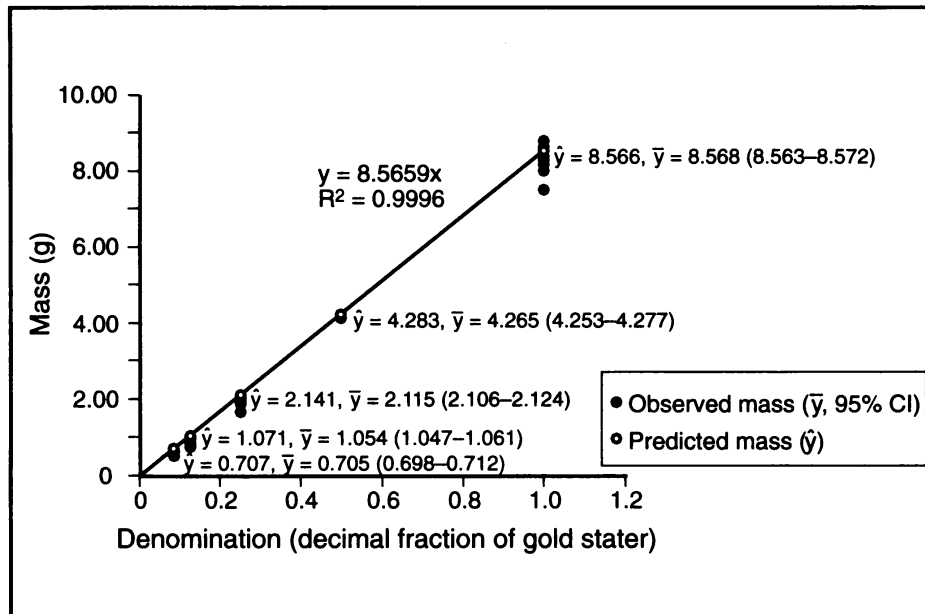


FIGURE 1. Least-squares linear regression of coin weight against inferred denomination for gold issues from Pella (data from Le Rider 1977).

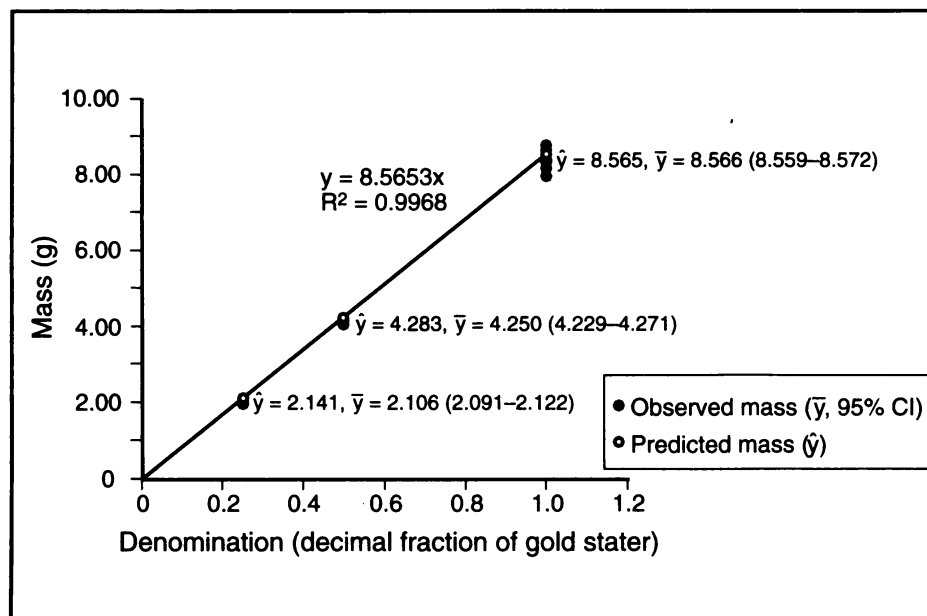


FIGURE 2. Least-squares linear regression of coin weight against inferred denomination for gold issues from Amphipolis (data from Le Rider 1977).

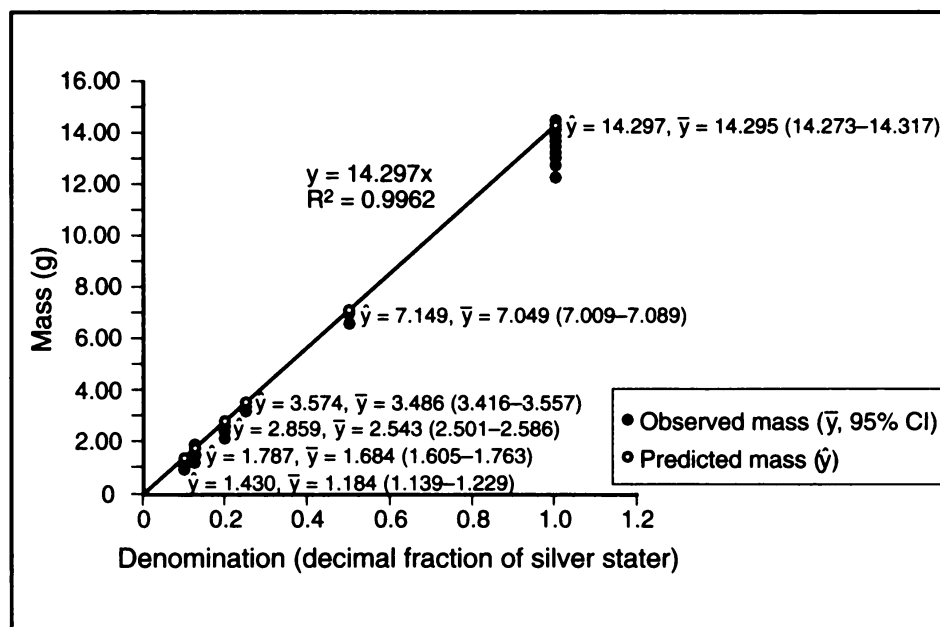


FIGURE 3. Least-squares linear regression of coin weight against inferred denomination for silver issues from Pella (data from Le Rider 1977).

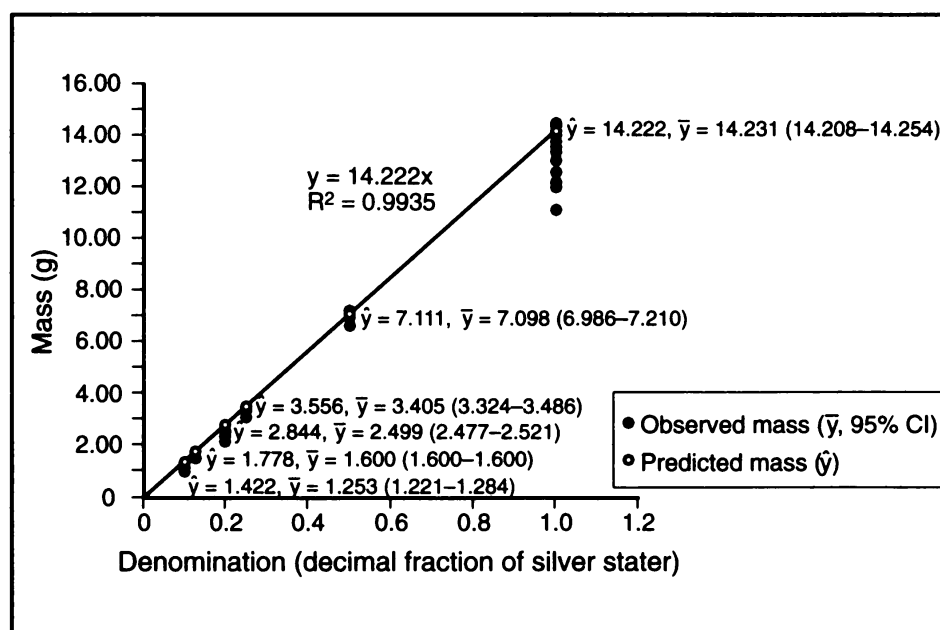


FIGURE 4. Least-squares linear regression of coin weight against inferred denomination for silver issues from Amphipolis (data from Le Rider 1977).

Accepting, at least for the sake of argument, that Philip's silver stater is a Corinthian pentadrachm, it is possible to demonstrate that such an interpretation clarifies certain aspects of Macedonian coinage. The Corinthian:Attic mass ratio is 2:3 for the same denomination in the same metal, e.g., the par mass of three Corinthian silver drachms (c. 8.58 g) equals the par mass of two Attic silver drachms (c. 8.56 g). Coinage on one standard could have been used quite readily for disbursements on the other standard, if the denominations were chosen properly. For payments in silver, neither standard had a particular advantage. Table 1 presents the major intersections of the Attic and Macedonian/Corinthian standards.

TABLE 1. Mass/Denomination Comparison

Mass (g)	Attic Issue	Macedonian/Corinthian Issue	Equivalents
42.85	decadrachm (10 dr.)	decapentadrachm? (15 dr.)	5 tridrachms or 3 pentadrachms
28.57	—	decadrachm (10 dr.)	
17.14	tetradrachm (4 dr.)	hexadrachm (6 dr.)	pentadrachm+drachm or 2 tridrachms
14.28	5 tetrobols (20 ob.)	pentadrachm (5 dr.)	
8.57	didrachm (2 dr.)	tridrachm (3 dr.)	
4.28	drachm (1 dr.)	trihemidrachm (1½ dr.)	9 obols
2.86	tetrobol (4 ob.)	drachm (1 dr.)	6 obols
1.90	—	tetrobol (4 ob.)	
1.43	diobol (2 ob.)	hemidrachm (½ dr.)	triobol
0.71	obol (1 ob.)	trihemiobol (1½ ob.)	

When viewed in the context of Table 1, Alexander III's adoption of the Attic standard for his silver coinage was not such a radical departure from the past as it has seemed to many (Price 1982:180–190, 1991:38; Mørkholm 1991:42). In Macedonia, Alexander's action served primarily to add a silver hexadrachm stater to the denominations in circulation.

Table 2 presents the gold:silver conversions at the three generally accepted gold:silver ratios of 1:13⅓, 1:12, and 1:10 (Head 1967: 222–228; Price 1982:180–181, 1991:38; Newell 1937:11; Le Rider 1977: 359; Mørkholm 1991:4, 41–43). The gold denominations are those

TABLE 2. Gold: Silver Exchange Ratio

Gold denomination (Attic)	Mass (g)	Ratio 1:13 $\frac{1}{3}$		Ratio 1:12		Ratio 1:10	
		Attic	Macedonian/ Corinthian	Attic	Macedonian/ Corinthian	Attic	Macedonian/ Corinthian
distater	17.14	53 $\frac{1}{3}$ drachms	16 pentadrachms	12 tetradrachms	72 drachms	10 tetradrachms	12 pentadrachms
stater	8.57	26 $\frac{2}{3}$ drachms	8 pentadrachms	6 tetradrachms	36 drachms	5 tetradrachms	6 pentadrachms
hemistater or drachms	4.29	13 $\frac{1}{3}$ drachms	4 pentadrachms	3 tetradrachms	18 drachms	10 drachms	3 pentadrachms
quarter stater	2.14	6 $\frac{2}{3}$ drachms	2 pentadrachms	6 drachms	9 drachms	5 drachms	7 $\frac{1}{2}$ drachms
eighth stater	1.07	3 $\frac{1}{3}$ drachms	1 pentadrachm	3 drachms	4 $\frac{1}{2}$ drachms	2 $\frac{1}{2}$ drachms	3 $\frac{3}{4}$ drachms
$\frac{1}{12}$ stater or obol	0.71	22 $\frac{2}{9}$ drachms	20 obols/5 tetrobols	2 drachms	3 drachms	1 $\frac{2}{3}$ drachms	2 $\frac{1}{2}$ drachms

struck by Philip, Alexander, or both; thus, they are not necessarily concurrent. Indeed, Philip II is not known to have struck distaters (Le Rider 1977:401–427).

Accepting that Philip's silver issues commenced some years before his gold issues and that the gold:silver ratio was, initially, 1:13 $\frac{1}{3}$, one notes the utility of striking gold on the Attic standard while striking silver on the Macedonian/Corinthian standard. Specifically, if disbursements were customarily made in pentadrachm staters, having gold issues that represent integer multiples of those pentadrachm staters would be highly useful; Price has applied similar arguments to the sparse gold issues of the Chalcidian League (Price 1982:181). This simple "exchange rate" resulted from the mathematical interaction between the gold:silver ratio and the Corinthian:Attic ratio previously described. The utility of the Macedonian/Corinthian silver pentadrachm stater in converting gold and its compatibility with the Attic standard does much to explain the continued striking of this coin and its fractions alongside the Alexander Attic tetradrachm/Corinthian hexadrachm. Indeed, it is interesting to speculate that the Philip pentadrachms were continued by Alexander until the gold:silver ratio fell to 1:12 (at which point the denomination was of little use) and that they were resumed by Philip III after the ratio had fallen to 1:10.

Philip's coinage may not have been the first use of the Corinthian standard in Macedonia. Alexander I struck silver on two standards (Kraay 1976:142–144; Troxell 1994:plates 1–2). Specifically, the "tetradrachms", "octobols", and "light tetrobols" are tridrachms, drachms, and hemidrachms, respectively, struck on the Attic standard (Troxell 1994: plates 1–2). "Octodrachms" and "heavy tetrobols" are struck on a second standard (Troxell 1994: plates 1–2). The masses for the "octodrachm" issues (27.51–28.93 g) in the ANS conform nicely to the theoretical mass of a Corinthian decadrachm (c. 28.57 g) (Troxell 1994: plates 1–2). The "heavy tetrobols" (2.20–2.40 g) conform reasonably well to the theoretical mass of a Corinthian pentobol (c. 2.38 g) (Troxell 1994:plates 1–2). Thus, it seems that Alexander I struck coins on both of the most widely used denominational mass standards of the time.

In conclusion, the so-called Thraco-Macedonian standard, the "local standard of c. 14.4 g", appears to be an artifact of modern numismatic

scholarship when applied to the coinage of Philip II and Alexander III. Based on the evidence presented, it appears that Philip II adopted the Corinthian standard, used by the Chalcidian League, for his coinage. Alexander III selected the Attic standard for his imperial issues but continued coinage on the Corinthian standard in Macedonia.

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THE “OWLS” FROM THE 1973 IRAQ HOARD

(PLATES 1–8)

PETER G. VAN ALFEN*

In early 1973, nearly 150 silver coins said to have been found in Babylon appeared on the market in two lots. In subsequent years a number of strays came forward also considered to be part of one lot or the other, bringing the total number to over 400 coins.¹ Generally

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¹ No accurate final tally of the number or types of coins found in the hoard exists. Three earlier notices of the hoard appeared in *Coin Hoards* (CH I.78, II.49, and III.22) which give a combined total of 308 coins. The most recent notice, CH VII.188, provides a figure, 302 coins, that is clearly derived from Price's (1991a) publication of a portion of the hoard. Price, however, does not list the 100+ Alexander III tetradrachms. I provide here the total from all published sources:

Alexander III (Babylon):

8 decadrachms

114 tetradrachms

Porus-type (Babylon? Susa?)

7 five-shekel

11 two-shekel

3 “Indian” two-shekel

Lion staters (Babylon): 106

Hierapolis-Bambyce?: 1

Sardes: 1 siglos

Macedonia, Philip II: 1

Cos: 1

called the “1973 Iraq”, sometimes the “1973 Babylon”, this hoard contained over 100 locally minted Alexander III imperial issues and lion staters, nearly two dozen coins of the “Porus” type, a handful of single coins from Macedonia, Cos, and the Levant, plus 165 Attic owls, mostly imitations. Due in part to the size of the hoard and diversity of its contents, its rapid dispersal, and specific scholarly interests, only portions of the hoard have been published to date. Dürr’s (1974) initial notice of the hoard concentrated primarily on the Porus-type coins, and Mørkholm’s (1974a, 1974b) and Shore’s (1974) publications of the same year presented a few of the lion staters and owl imitations acquired by the Copenhagen museum. A fuller account of the hoard was offered by Price a number of years later, although this too was far from complete (1991a, 1991b:51, 451–457). It was also Price who set the date for the burial of the hoard, on evidence of the Alexander coinage, to 323/22 BC.² This study focuses only on the 165 Athenian owl-type coins, 160 of which were acquired by the British Museum, 4 by the Copenhagen museum, and 1 by the American Numismatic Society.

GENERAL OBSERVATIONS

Any initial observation quickly reveals that the owls of this hoard are stylistically a very mixed group, even for a collection of a notoriously monotonous coin type. In fact, one might venture that this collection is stylistically far less homogenous than most hoards of owls

Athenian owl-type:

1 Artaxerxes III

1 Sabaces

161 tetradrachms (probable Attic and imitations)

2 drachms

Total: 418

² The imperial issues and lion staters from the hoard display monograms that go down the sequence of the main eastern mints to the issues signed **M-AY** of 323 BC. For this reason Price (1991a:67, 1991b:51) felt a date of 323/22 for the burial of the hoard is assured. Others, who have focused primarily on the Porus coinage, have offered a later date of c. 315 BC. Addressing these arguments, Lane Fox remarks, “[w]e should not be too precise about the date of burial, but a date in or before 323 BC does fit the contents which we can best classify” (1996:91).





















found in the Levant and Egypt, or even farther east.³ I have identified fifteen distinct groups of two or more coins within this collection, almost all of them imitative, which do not include single examples, such as the Artaxerxes coin or the Sabaces coin, which rightfully form groups of their own. Grouping of the owls was determined first on the basis of die links and legends and other markings, and secondly on stylistic criteria. Three of the groups (probable Attic issues, fifth-century style, and miscellaneous imitations) are general categories for those coins that share distinctive traits but are not otherwise (die-) linked. The numbered groups (I–XII) contain coins which are die-linked or are clearly products of the same hand or workshop. All of these groupings and their criteria will be more fully explicated below, as will the historical implications of the individual groups.

Sixteen of the owls, all of them probable Attic issues, bear countermarks (Table 1); no graffiti were noticed on any of the coins. Since most of the imitations (coins in groups I–XII and miscellaneous imitations) were likely minted in Babylonia (see Discussion below), countermarking may not have been a Babylonian practice, as might also be inferred from the near-total lack of countermarks found on lion staters and other Mesopotamian issues. In their study of fifth- and fourth-century Phoenician coinage, J. Elayi and A. Elayi noticed that countermarks seem to be found only on coins circulating outside of the region in which they were minted (1993:317). Also, as a phenomenon, the countermarking of Phoenician coins appears limited to a zone

³ This is only a general observation since I have not yet performed a full quantitative analysis of all the available material. Even so, Classical and Hellenistic hoards from Egypt of more than 10 coins *seem* to show considerable stylistic homogeneity among the owls, much like the hoards from Greece of the same period (cf. *IGCH* 1649, 1652, 1656, 1660, 1663; *CH* VII.151). Greater stylistic diversity is often seen in the owl-hoards from the Levant. For example, the owls from the “1989 Syria” hoard (*CH* VII.158), the subject of a study I hope to complete soon, show more variation (approximately six stylistic groups) than the Egyptian hoards (generally one to three groups), but still less than this hoard does (at least fifteen groups). See also *IGCH* 1504, 1507; *CH* VII.126, 133, 152; Elayi and Elayi (1993:no. 49), and a recent hoard probably from Syria (Elayi and Elayi 1994). A hoard of owl-imitations found in Afghanistan likewise shows little variation among the coins (Nicolet-Pierre and Amandry 1994).

comprising the southern coast of Asia Minor, the Levantine coast, and Egypt (Elayi and Elayi 1993:316). Following a similar pattern, countermarks frequently appear on Attic-style coins found in the Levant and especially in Egypt, both on imitations and on those thought to be authentic (cf. Dattari 1905; Hill 1922a:cxv-cxl). Their function on these coins, however, is not entirely clear. Cities often countermarked foreign coin to enable it to circulate freely with the city's jurisdiction; private bankers or merchants also used countermarks to (re-) certify the coin. No doubt most, if not all of the countermarked owls from this hoard saw some circulation in parts of the Levant or Egypt before coming to rest in Babylonia. There may, in fact, be a number of links between the countermarks found here and those on coins found in Syria and Egypt (see Table 1).

TABLE 1. Countermarks and Mint Marks

Countermarks					
1. 	2. 	3. 	4. 	5. 	6. ^a 
7. 	8. 	9. ^b 	10. ^c 	11. ^d 	12. 
13. ^e 	14. 	15. 	16. 	17. ^f 	18. 
Mint Marks					
1. 	2. 				

^a Cf. Hill (1922a:cxvii) countermark 63.

^b Cf. Hill (1922a:cxvii) countermark 4.

^c Cf. Hill (1922a:cxvii) countermark 100.

^d Cf. Elayi and Elayi (1994) countermark B3.

^e Cf. Hill (1922a:cxvii) countermark 4.

^f Cf. Hill (1922a:cxvii) countermark 105.

Aside from the countermarks, well over half (65%) of all the owls have slices or small cuts made on the surface of the coin with a chisel-like tool. Additionally, a number of the coins also have punch marks (not countermarks) made with a pointed, awl-like tool. These cuts and punches were undoubtedly made to test the coins for sub-aerate cores. By dividing the owls from the 1973 hoard into two groups,

probable Attic and imitations, and averaging the results by percentage, certain practices with the chisel become apparent (Table 2). Chisel cuts appear almost twice as frequently on the imitations as they do on the probable Attic coins. The greatest number of slices are single cuts on the reverse of the coin. Furthermore, those who cut the probable Attic coins generally avoided marking the obverse, or the obverse and reverse simultaneously, or making more than one cut. This is not the case with the imitations, where all manners of cutting occur far more often, particularly cutting the coin more than once on a side. It is open to question whether these tallies reflect different regional practices or a recognition among those handling the coins that some were unquestionably non-Attic and so deserved to be checked and checked again.

TABLE 2. Chisel cuts

Probable Attic issues (52 coins)	
Location	Proportion of Total with Cuts
Obverse	7%
Reverse	25%
Obverse and Reverse	5%
Multiple	7%
Imitations (113 coins)	
Location	Proportion of Total with Cuts
Obverse	13%
Reverse	36%
Obverse and reverse	15%
Multiple	33%

Note: 108 of the 165 (65%) Athenian-type coins from the 1973 Iraq Hoard have chisel cuts.

The tabulated weights of the owls can be found in Table 3 and prompt some general remarks about the weights of all the owls. Because the fifteen groups presented here likely reflect several different mints operating as far apart as Athens, the Levant, Egypt, and Babylonia, separate tables are presented for each group with the exception

TABLE 3. Coin weights

Probable Attic (52 coins)		
Below 15.99	*****	5
16.00–16.04		0
16.05–16.09	**	2
16.10–16.14	**	2
16.15–16.19		0
16.20–16.24	**	2
16.25–16.29		0
16.30–16.34	*	1
16.35–16.39	**	2
16.40–16.44	**	2
16.45–16.49	**	2
16.50–16.54	***	3
16.55–16.59	*	1
16.60–16.64	****	4
16.65–16.69	****	4
16.70–16.74	****	4
16.75–16.79	*****	5
16.80–16.84	*****	7
16.85–16.89	***	3
16.90–16.94	*	1
16.95–16.99	*	1
Above 17.00	*	1

Lowest-highest weight: 15.21–17.28 g

Average weight: 16.52 g

Median weight: 16.25 g

5th c. Style

Attic (2 coins)

Average weight: 16.60 g

Imitations (4 coins)

Average weight: 16.78 g

Median weight: 16.74 g

Groups I–V and Miscellaneous Babylon (71 coins)		
Below 16.19	*****	5
16.20–16.24	*	1
16.25–16.29	****	4
16.30–16.34	**	2
16.35–16.39	**	2
16.40–16.44	*	1
16.45–16.49	*	1
16.50–16.54	*	1
16.55–16.59	****	4
16.60–16.64	***	3
16.65–16.69	***	3
16.70–16.74	*****	7
16.75–16.79	*****	6
16.80–16.84	****	4
16.85–16.89	**	2
16.90–16.94	*****	6
16.95–16.99	***	3
17.00–17.04	**	2
17.05–17.09	**	2
17.10–17.14	***	3
17.15–17.19	***	3
17.20–17.24	***	3
17.25–17.29		0
Above 17.30	***	3
Lowest-highest weight: 15.28–17.57 g		
Average weight: 16.71 g		
Median weight: 16.42 g		
Group VI (2 coins)		
Average weight: 14.42 g		
Group VII (2 coins)		
Average weight: 16.15 g		
Group VIII (2 coins)		
Average weight: 15.78 g		

Group IX (2 coins)

Average weight: 16.51 g

Group X (3 coins)

Average weight: 14.06 g

Median weight: 14.08 g

Group XI (2 coins)

Average weight: 16.40 g

Group XII (2 coins)

Average weight: 16.52 g

Phoenician (2 coins)

Average weight: 16.77 g

Miscellaneous Imitations (41 coins)

Below 14.99	***	3
15.00–15.04		0
15.05–15.09	*	1
15.10–15.14		0
15.15–15.19	*	1
15.20–15.24		0
15.25–15.29		0
15.30–15.34	*	1
15.35–15.39	**	2
15.40–15.44		0
15.45–15.49		0
15.50–15.54	***	3
15.55–15.59		0
15.60–15.64	**	2
15.65–15.69		0
15.70–15.74		0
15.75–15.79	*	1
15.80–15.84		0
15.85–15.89		0
15.90–15.94		0

15.95–15.99		0
16.00–16.04	**	2
16.05–16.09		0
16.10–16.14		0
16.15–16.19		0
16.20–16.24		0
16.25–16.29		0
16.30–16.34	**	2
16.35–16.39	*	1
16.40–16.44	**	2
16.45–16.49	*	1
16.50–16.54	*	1
16.55–16.59		0
16.60–16.64	**	2
16.65–16.69	***	3
16.70–16.74	**	2
16.75–16.79	***	3
16.80–16.84	**	2
16.85–16.89	*	1
16.90–16.94	*	1
16.95–16.99		0
Above 17.00	****	4

Lowest-highest weight: 14.71–17.19 g

Average weight: 16.26 g

Median weight: 15.95 g

Drachms (2 coins)

Average weight: 4.14 g

of groups I–V and the miscellaneous Babylonian coins which I feel are products of the same administrative unit; groups I–V and the miscellaneous Babylonian coins therefore are presented in one table. There are no examples in this collection of *fleur de coin*; all of these coins were in circulation, some obviously for a longer period than others. Seventy-eight percent (128 coins) of the total number of owls have weights that fall between 16.00 and 17.00 g. A dozen of the tetradrachms

have weights above 17.00 g (one coin, no. 161, above 18.00 g), and two below 14.00 g (nos. 107, 113); the two drachms from the hoard have individual weights of 4.12 and 4.16 g.

Although the number of coins available in each group is not large, nevertheless the frequency tables suggest the use of a number of different standards in this collection of owls. The frequency table for the probable Attic issues shows a curve skewed to the left with the mode at 16.80–16.84 g; the average weight for this group of 52 coins is 16.52 g, with only one example having a weight above 17.00 g. While the mean falls short of the presumed Attic standard of c. 17.17 g for the fourth-century tetradrachm (Naster 1983:83), the weights of these owls are generally consistent with other fourth-century hoards of owls containing authentic issues. For example, the average weight for the Thorikos hoard (*IGCH* 134) of 288 owls is 16.95 g,⁴ while the average weight for the Delos hoard (*IGCH* 110; 42 coins) is 16.52 g (Svoronos 1975:pl. 30). Wear or over-vigorous cleaning may account for some of the drop in weight, but some little-worn examples, e.g. no. 10 here, still are underweight (16.68 g), and as a group the probable Attic issues are considerably lighter than the Babylonian owls (groups I–V). Generally lower weights, e.g., between 16.00 and 17.00 g in collections of fourth-century style owls (Svoronos 1975:pls. 27–29) compared to fifth-century owls (Svoronos 1975:pls. 9–14) might point to a reduced late fourth-century Athenian standard in coin production; more work on this question should be done.⁵

For the Babylonian owls (groups I–V and miscellaneous), the frequency table appears multimodal, with a greater range in weights (15.28–17.57 g) than found among the probable Attic issues; the average weight for this group of 71 coins is 16.71 g, sixteen of them have weights over 17.00 g. Strict control over the desired standard in

⁴ This average weight for the Thorikos hoard is from my own calculations. In his presentation of the hoard, Bingen selected only 61 examples “non-corrodées”, all with weights above 17.00 g, for his metrological study (1973:57). The frequency table of these coins shows a mean of 17.15 g, which aligns with the presumed Athenian standard of c. 17.17 g.

⁵ Mørkholm (1982) has noted a third-century reduction in the Attic standard in the East; perhaps there were other reductions earlier at Athens.

the production of these coins seems to have been lacking, which makes determination of the standard difficult. The Attic standard is the likeliest candidate, although the Babylonian shekel of c. 8.33 g can not be discounted (Elayi and Elayi 1997:302); a rough approximation of two shekels with four drachms could easily have been made. The Babylonian shekel may also be the standard in use for groups VII, VIII, IX, and some of the miscellaneous imitations that have weights between 15.00 and 16.00 g. The generally low weights of the eastern owls, lion staters (also presumably minted on the Attic standard⁶), and Porus coins opens the possibility of other standards used for some of these issues. Price, in fact, thought a shekel of c. 8.00 g was the standard in use for the Porus coinage (1982:76, 1991a:65). The very low weights (c. 14.00 g) found in groups VI and X and other miscellaneous imitations suggest the Phoenician coin standard of 14.00 g (Elayi and Elayi 1997:304); stylistically the coins from groups VI and X appear similar to Phoenician issues and Levantine owl imitations.

THE CATALOGUE

Because of the consistency of type and type orientation among the owls, in the catalogue I note only the particular characteristics of each coin and use set descriptive terms to denote certain attributes. I have adopted a number of terms and observations from J. Bingen's (1973) study of *pi*-style owls; with few exceptions, the owls of this hoard are *pi*-style, a fourth-century style distinguished by the Π -shaped helmet ornament on the obverse. The presence or absence of the "point tragus" (a small dot representing the tragus of the ear) is noted; on the reverse, the number of dots found between the beak and the edge of the owl's body to right ("dots-beak") is recorded, as is the occurrence of a dot slightly above and between the owl's eyes ("dot-forehead").

⁶ The weights of the lion staters are problematic. Newell recognized that the first issues were likely intended to be on the Attic standard, but that their weights rapidly became so light as to be the weight of three sigloi (1938:105f). However, they cannot have meant to be "triple sigloi" since their division into didrachms, hemidrachms, and obols points to a division by twos rather than threes.

Bingen described five types of the *pi*-ornament (types 1–5) which represent a possible chronological progression of the style. Generally, I have followed Bingen's classification, but because I find little or no variation among some of Bingen's types, types 2 and 3 especially, I indicate the *pi*-type more loosely, e.g., as *pi*-style 2/3, or simply as *pi*-style where part of the ornament is off-flan and/or difficult to distinguish.

Two types of earrings worn by Athena are differentiated: "hoop" means a circular ring with either no filling or a very small central pellet; "disk" means a filled-in circle or a hoop with a larger central pellet. Countermarks corresponding to the number given in the catalogue can be found illustrated in Table 1. "Museum number" refers to the acquisition number of coins held either at the British Museum (BM) or the American Numismatic Society (ANS). Finally, I have included in the catalogue 31 coins that were not found with the Iraq hoard, but which either have die links with coins from this hoard or are part of the same series. All of these external coins are indicated by "X", e.g., X23.

PROBABLE ATTIC ISSUES (nos. 1–52)

If the Artaxerxes coin is included, only seven owls of fifth-century style were found with the 1973 Iraq hoard; these I have listed below separately. All of the remaining owls, whether probable Attic issues or imitative, at least so far as the obverse helmet ornament is recognizable, are fourth-century *pi*-style, ranging from Bingen's *pi* 2 to 5; there are no examples of the *ornementation quadridigitée* (QD). Because the coinage has not been subjected to exhaustive review, or even comprehensive overview, such as the work of Nicolet-Pierre and Kroll (1990) on third-century QD owls, attempting anything more than a cursory classification of later fourth-century *pi*-style owls is notoriously difficult. Three studies, those of Thompson (1957), Dodson and Wallace (1964), and especially Bingen (1973) have paved the way for future work on this coinage, but these studies dealt with only one hoard each and hoards that have been assigned burial dates in the third

century, c. 290, c. 240, and 285 BC respectively, which compounds the problems of classification for our hoard.

The origin of the *pi*-style coinage is likely linked to renewed interest in developing the Laurion silver mines after a prolonged period of near-inactivity in the first half of the fourth century, which may account for the relative scarcity of earlier fourth-century Attic owls (Kroll 1993:8). Under the mid-century financial reforms of Euboulos, 355–342, mining leases and activity at Laurion increased tremendously, with the result of massive new coinage being struck. Differing appreciably in style from the fifth- and early fourth-century series, this new coinage nevertheless retained the same monotony and standardization of previous issues. If Bingen's questionable chronological progression for *pi*-types 1 through 5 can be accepted, the examples from this hoard demonstrate that within a generation of its inception, the *pi*-style coinage had already attained its latest stylistic manifestation (*pi*-type 5), an indication, perhaps, of just how massive the coinage was. This new Athenian output predictably gave rise to many new series of imitations mimicking the *pi*-style, just as imitations had mimicked the fifth-century style decades before.

I have placed the first 52 coins of the catalogue under the rubric "probable Attic" due to the suspicion that some of them may well be imitations; their findspot and the large number of imitations found with them suggest caution. The coins that are most suspect (nos. 46–52) are listed apart from the others. Furthermore, the closest parallels that I have found for most of these coins are not from hoards found in Greece but from hoards found in Egypt and the Near East, all of which include imitations: *CH* VII.125, "Egypt" (c. 350 BC),⁷ the 1992 Near East hoard (c. 333–300 BC; Elayi and Elayi 1994), and unpublished pieces from *CH* VII.158, "1989 Syria" (c. 333 BC). A considerable variety in both obverse and reverse details, as well as a lack of die links among the probable coins of this hoard defy grouping these pieces into coherent sets. For this reason I present them as one group. However, there are a few observations to be noted.

⁷ A number of these coins are illustrated in Nicolet *et al.* (1983:nos. 1472–1482).

A number of these coins (nos. 1, 2, 3, 4, 6, 7, 38, 46, 47, 48) display a rare and peculiar treatment of Athena's eye. Whereas the more normative eye is engraved with curvilinear, or sometimes more straightened upper and lower eyelids rendered in such a way as to give a wide-eyed, almost upwards gaze, these examples have longer, flattened upper eyelids with a heavy parallel brow. The lower eyelids are appended sharply below with inset irises (often with pupils) that present a sometimes stern, almost fierce expression. A half-dozen such obverses, quite similar to no. 4 here, came to light with the 1989 Syria hoard; Bingen's obverse no. 15 has a similar trait. Small irises, again often with pupils, are frequently seen among all of these coins rather than the blank sclera found on many *pi*-style obverses (cf. nos. 36 and 37; Svoronos 1975:pl. 20; Bingen 1973:*passim*). With one exception (no. 6), the scroll at the base of the helmet (behind the ear) scrolls counterclockwise. On the reverse, the owls tend to have the more upright stance of Bingen's types 3 through 5. These owls are also characterized by shorter legs (and smaller feet) set more closely together than the spread, longer-legged versions seen on Bingen's types 1 and 2 and on the fifth-century series. The left leg on these later owls, as here, has a bulky, squarish feathering while the right leg is unadorned. No significant distinction exists among the ethnics, which have typically blocky letters, nor among the crescent moons and olive sprays. The leaves of the latter tend to be at right angles, the leaves themselves being more or less full, often with a distinct midrib. Four examples (nos. 10, 17, 31, 35) have elongated, oblong flans, a trait also seen among a number of probable Attic issues from the 1989 Syria hoard, as well as among fourth- and third-century examples illustrated in Svoronos (1975:pls. 20.19, 26.24, 27.16–17, 28.3–4, 28.12).

FIFTH-CENTURY STYLE (nos. 53–58)

Because of questions raised by T. V. Buttrey (1982, 1984) concerning the minting location, Athens or Memphis, of many fifth-century style owls, I have set the following six coins apart from the probable Attic issues and the imitations. While the treatment of the eye and other obverse features of nos. 53 and 54 differ, they do share similarities in fabric and reverse features, such as the stance and

outline of the owl and the asymmetrical olive spray, parallels for which have come out of Egypt, Syria, and Greece (Svoronos 1975:pls. 26.1, 108.4-5, 111.1).⁸ These may well be Athenian. The abraded obverse of no. 55 makes it difficult to determine if the coin truly belongs to this group; the helmet ornament is notably different from most fifth-century types as is the treatment of the eye (note especially the pupil). In general configuration, the obverse of no. 55 seems close to fifth-century types, though distinct enough to be classified as an imitation. Nos. 56, 57, and 58 are undoubtedly imitations and likely the products of the same mint. The somewhat crudely executed owls and ethnics, and the fact that the E of the legend does not extend to the "ground" level upon which the owl's feet rest, as on most Athenian series, make these good candidates for being imitations. More telling, however, are marks found on the reverse below the owl's tail feathers (see Table 1). I have tentatively labeled these as mint marks, although their function and even design are uncertain. Because parallels for nos. 55-58 cannot be found, the origin(s) of the coins cannot be ascertained, although the possible die link and stylistic similarities of nos. 56-58 might indicate that these coins had not traveled far from their minting location.

IMITATIONS (nos. 59-164)

Listed first among the imitations are those groups that contain examples that have an Aramaic inscription in place of the Athenian ethnic (groups I-V). Many of the coins in these groups also bear additional symbols. On the obverse, the number of parallel strands of beads below Athena's ear, which hitherto has not been of importance since all the probable Attic coins have only one strand, is now noted in the catalogue; some of the imitations have up to four strands. Groups I-V are almost certainly of Babylonian origin. As with the coins from this hoard, all other examples of similar or linked coins (the "X" coins of the catalogue), where provenance is known, are from collections found

⁸ From the 1989 Syria hoard there are four coins with a similar reverse, two of which have obverses very much like that of no. 54.

either in Babylon or in Babylonia generally (*IGCH* 1747, 1752, 1753, 1757, 1761); to date, with the possible exception of coins from an unprovenanced 1996 hoard (see note 24 below), no examples of these coins have been found outside of Babylonia. Aside from groups I–V, a Babylonian origin is also suggested for groups VII–IX and XI–XII. With the exception of two coins from the Levant (nos. 120 and 121), the origins of the remaining coins are left open.

Group I (nos. 59–72, X1–X6)

Based on the shape of the eye and facial structure, group I is divided into three subgroups: Ia (nos. 59–61, X1–X2), Ib (nos. 62–66, X3), and Ic (nos. 67–72, X4–X6). All three subgroups share a highly distinctive helmet ornament, double volutes with projecting rays, which is unique among Athenian owl imitations.⁹ The coins of group Ia are distinguished by an open eye, those of group Ib by an open eye with a more parallel lower eyelid and a stern, almost masculine face, those of Ic by a long flat nose and a lower eyelid that forms a slight hook. Most group I coins bear an inscription in Aramaic, although often the inscription is either off-flan or executed so lightly that it has worn to the point of illegibility. One coin, no. 62, shows no trace of an inscription, Aramaic or Greek. Furthermore, only one example, no. 60, has what may be a symbol on the reverse similar to those found in other groups, although it is formed so roughly (as the owl is) as to raise doubts. The owls are generally quite long-legged, have cleft heads, and in some cases have an unusual manner of representing the body feathers (e.g., nos. 67, 68). A number of coins in this group exist in other collections, as noted by the “X” designation.¹⁰

⁹ Nicolet-Pierre and Kroll (1990:pl. 4, B1–B4, C1–C4) illustrate examples of third-century imitations with a single volute ornament without rays.


¹⁰ Illustrations of the “X” coins, except for unpublished pieces in the ANS cabinets, are found in Babelon (1910), Newell (1938b), Le Rider (1972), Diebolt and Nicolet-Pierre (1977), and Nicolet-Pierre (1979).

Group II (nos. 73–74, X7)




The coins of this group are stylistically very similar to group I; no. 74 has the double volute helmet ornament, but has two strands of beads below the ear rather than one as on all group I coins. The helmet ornament on nos. 73 and X7 is indeterminable, but appears closer in design to that of group I than to the *pi*-style ornament of the probable Attic coins and other groups. No. 73 bears the Athenian ethnic and X7 bears Aramaic **MZDK**; the inscription on no. 74 is off-flan.

Group III (nos. 75–85, X8–X18)

Group III coins are characterized primarily by the treatment of Athena's eye, the clearly demarcated iris and pupil, as well as the more upright and closely spaced M-shaped helmet ornaments in front of the *pi* ornament. The coins of this group have been placed into three subgroups: IIIa (nos. 75–80, X8–X10), IIIb (nos. 81–83, X11–X14), and IIIc (nos. 84, X15). The eye of the Athena on IIIa examples is elongated and nearly frontal in appearance. Because the angle between the lines of the lower jaw and the front of the neck is obtuse, the head appears to be upturned. A die link exists between a few of the IIIa obverses; those that are not linked were likely engraved by the same hand. More die links exist among the IIIb obverses which differ from the IIIa examples primarily in the eye, which is more open and less elongated and is surmounted by a sharply angled eyebrow. The eye of group IIIc is similar, but the chin and lips are smaller. Although the state of the coins makes die links between the reverses uncertain, several of them are so similar in style and execution that they might be the work of one hand if not actual links. One such possible die link joins a IIIa obverse with a IIIc obverse (nos. X8, 84). What is most remarkable about group III reverses, however, is the fact that some examples in all three subgroups bear an Aramaic inscription and some the Athenian ethnic. Die links in subgroups IIIa and IIIb show that the same obverse was used with both reverse types. Often the inscription, whether Aramaic or Greek, is crudely formed with letters misshapen or rotated or, in the case of no. 78, with the entire inscription reversed.

All examples with an Aramaic inscription bear the  symbol, although two examples not from the 1973 Iraq hoard (nos. X10, X12) have additional symbols as well. On the basis of this symbol and a general stylistic congruity with the obverses and reverses of group III, I have included unclassified group III coins (no. 85, X16–X18) which individually do not fit into any of the subgroups IIIa–c.

Group IV (nos. 86–98, X19–X23)

The obverse and reverse execution of group IV shows greater refinement than that of group III, especially in the inscription and presentation of the owl. Many examples are quite similar to those from Athens. All group IV coins, if it can be read, bear a carefully engraved and highly legible Aramaic legend. Often at the ends of the lines forming the individual letters there are small dots, presumably a decorative trait. There are no coins of this group with the Athenian ethnic. Where legible, all examples bear the symbol , or a possible variation  (no. 88, X20); two examples (no. 90, X19) have in addition the symbol . In place of the crescent moon on the die-linked reverses of no. 93 and X21, an unusual triple-pronged crescent-like object appears. If not for the occurrence of a similar object in place of the crescent on the reverse of an example in the ANS cabinets (1944.100.81366), a reverse which is not linked to the others, this object might be taken to be the result of a die fault.¹¹ As it is, it seems deliberate with an unknown significance.

The subdivision of group IV into four subgroups is based upon obverse die links and differences primarily in the treatment of the eye and earring. On coins of IVa, both the eye and the disk earring are larger than those found on coins of the other subgroups. The flans of IVa coins are also smaller. A single strand of beads below the ear is the distinguishing factor between the otherwise similar obverses of IVb and IVc. The more recessed chin and mouth as well as a softer facial expression mark the obverses of IVd.

¹¹ The reverse die found with the Egyptian Tell el-Athrib hoard (*IGCH* 1663) also has a three-pronged crescent. However, this unusual crescent is not well-formed as on our examples, which may indicate that in the case of the Egyptian reverse die it is in fact a die fault. For an illustration of the die, see Dattari (1905:pl. II, 2–3).

Group V (nos. 99, X24–X26)

There is only one example from this group which belongs to the Iraq hoard; the other three coins come from two other collections. Both the obverse and reverse of the two examples in the ANS collection (X24, X25) are die-linked; this reverse is also linked to no. 99. The owl of this group has a very distinctive striding posture, flattened oblong head, and stout feathered legs. The olive spray to left is opened to form an obtuse, nearly flat angle. Like some examples from group IV, the individual letters of the Aramaic inscription found on group V reverses bear decorative dots. There are no additional symbols. Obverses exhibit a refinement and delicacy in the rendering of certain details such as the eye and helmet ornament.

Miscellaneous Babylonian (nos. 100–105, X27–X30)

Although these ten coins cannot be placed in any of the above groups, they are likely issues from the same region or perhaps from the same mints as groups I–V due to stylistic similarities and their inscriptions. Of particular note are the symbols that appear on the reverses of nos. 101 and 103.

Unattributed Groups

The coins of groups VII (nos. 108–109), VIII (nos. 110, X31), IX (nos. 111–112), XI (nos. 116–117), and XII (nos. 118–119) may be Babylonian if only because the similarities or actual die links within the groups and stylistic similarities between some of the groups suggest a nearby minting location. The abstract portrayal of Athena in groups VII, VIII, and IX is completely unlike any of the Athenas found on the Babylonian issues (groups I–V), or imitations from Egypt and the Levant, and far more reminiscent of later imitations from South Arabia (see Svoronos 1975:pl. 111). All of the remaining catalogued coins bear the Athenian ethnic.

Levantine

As noted above, groups VI (nos. 106–107) and X (nos. 113–115) have weights and stylistic cues which are suggestive of Levantine

production, although their attribution to the Levant is not certain; their inclusion under this rubric is tentative. Price (1991a:68) attributed nos. 120 and 121, both stylistically unrelated, to Phoenicia generally, no. 120 to Gaza specifically; this coin almost certainly predates the destruction of that city by Alexander in 332. Both coins bear Phoenician letters of unknown meaning in addition to the Athenian ethnic. Diebolt and Nicolet-Pierre (1977:pl. 24, no. 14) illustrate an imitation of unknown provenance with similar inscriptions, having the Athenian ethnic and two small Semitic letters, likely Aramaic, tucked beneath the owl's breast.

Miscellaneous Imitations (nos. 122–161)

Generally, the imitative quality of these remaining unclassified coins is apparent. Because there are no die links, close stylistic similarities, or parallels found among these coins, their origins cannot be determined. In his notes on the hoard in the British Museum, Price marked nos. 148, 149, 150, and 156 as possible Phoenician issues; I leave the question open.

Drachms (nos. 162–163)

These two drachms represent the only pseudo-Attic coins of smaller denomination from the 1973 hoard. The obverses may be related, but it is difficult to say with certainty. Some stylistic parallels—primarily the large, open eye—between these coins and drachms found with the Tel Tsippor hoard (*IGCH* 1514; Rahmani 1967:145 nos. 62 and 63) suggest that these are Levantine, as might the symbol on the obverse of no. 162.

DISCUSSION

An enormously complex phenomenon extending from the later part of the fifth century to well into the third, the minting of pseudo-Attic coins had as much to do with the availability of authentic owls, the expected exchange medium in local markets outside of Athens, as it did with greater political and economic factors. Persian satrapies, like those in Egypt, Syria, and Asia Minor, produced imitations at various

times for the discharge of governmental financial obligations for recipients who presumably expected payment in Attic-type coin.¹² Often the Persian issues betray their origins with supplementary inscriptions and symbols. Countless other moneyers, some presumed to have been private and some true counterfeiters, produced thousands of anonymous imitations; the greater portion of the imitations from this hoard fall into this category. Obviously, there is no way to ascertain which of these anonymous imitations were produced privately or by the state, or the motivations that lay behind their production. The rougher, more caricatured types of imitations are not necessarily private issues. As the coins from the 1973 Iraq hoard indicate, quantities of authentic and imitative owls were in circulation in Babylonia by the late 320s; this area had become fertile ground for the production of Athenian imitations, many of which were undoubtedly produced under official oversight. This might have been the case only after c. 331, for coin use in Babylonia, as in most of the eastern Persian Empire before Alexander, was not widespread, nor did Babylonia likely possess a mint until after the Macedonian arrival. Newell (1923:140) suggested that Babylon had perhaps possessed a mint under the Persians. However, nothing which has come to light in the last several decades has offered support to this supposition (see Price 1991b:451). This is a point to which I will return shortly.

The most informative pseudo-Attic coins from this hoard are those in groups I–V. Due to the Aramaic legend **MZDK** that most of these coins bear, they are also some of the more distinctive and better-known Athenian imitations. Discussion of these coins with the **MZDK** legend is usually linked with another series of imitations, minted in Egypt, with the Aramaic legend **SWYK**. Since the nineteenth century, scholarly debate over the correct reading and meaning of the legends found on the **SWYK** and **MZDK** coins has sometimes been bitter (cf. Newell 1938b:84; Lane Fox 1996:96–97). The **SWYK** legend is taken to be the Aramaic representation of a Persian name that has come to us through Greek and Latin sources as “Sabaces”. Since Aramaic was used



¹² The most recent and fullest account of pseudo-Attic minting in Egypt and Asia Minor appears in Figueira (1998:528–535). For pseudo-Attic coins in the Levant see Nicolet-Pierre (2000).

in administrative contexts in the fourth-century Achaemenid empire, its appearance on a coin with possible satrapal connections is not surprising. Written sources seem to name a Sabaces as the Persian satrap of Egypt who was killed at the battle of Issus in November 333, but the transmission of the name has been garbled in the manuscripts; the variants “Tasiakes” and “Stasiakes” also occur.¹³ If it can be attributed to Sabaces, there exists a large series of imitations bearing his name, likely minted at Memphis over a period of years (340–333) before the battle of Issus (Price 1990, 1993). Though not yet subjected to a thorough study, the size of the “Sabaces” coinage is indicated not only by the large number of obverse and reverse dies found among existing examples, but also by the numerous additional inscriptions that sometimes appear to the left of the owl. Although most examples of these coins have been found in Egypt, a number have been found elsewhere: one example was found with the 1973 Iraq hoard (Mørkholm 1974a:pl. 1, 6) and eight were found with the 1989 Syria hoard (Price 1993).

Since Nicolet-Pierre’s (1979) discussion of the reading **SWYK**, dissenting opinions opting for the reading **SWYN** have been voiced, primarily by E. Lipinski (1982), a possibility arising from the similar appearance of the archaic Aramaic letters *kaph* and *nun*. Those who prefer the reading **SWYN** attribute the coins not to Sabaces but to the Aramaic colony of Syene, modern-day Aswan. In light of two other series of Egyptian imitations with non-Greek legends, this reading seems unlikely. The first, an earlier series bearing the name in demotic of Artaxerxes III Ochus (“Artaxerxes Pharaoh”), the Persian Great King who reconquered Egypt in 343, and a later series with the Aramaic legend **MZDK**, understood as the name “Mazaces,” clearly demonstrate the Persian practice of placing rulers’ names on state-minted pseudo-Attic coins in Egypt. In fact, the practice was more widespread in the Persian empire of this period. Mazaïos, for example,

¹³ Nicolet-Pierre (1979) addresses the textual variations and other historical problems associated with the **MZDK** and **SWYK** series. This section is largely based on her work. Also see Alram (1986) for a more recent treatment of the figures Mazaïos (nos. 350–359), Artaxerxes III (no. 370), Sabaces (nos. 371–375), and Mazaëus (nos. 376–379).



the satrap of Cilicia who was later transferred to Babylon, issued a series of staters and smaller denominations from Tarsus that bear his name in Aramaic (Newell 1920). Furthermore, stylistic parallels among all three of the Egyptian series indicate ongoing and successive minting during the decade immediately preceding the battle of Issus.¹⁴ Their use, at least initially, must have been to pay off the (Greek) mercenaries hired for the campaign to retake Egypt, later reasons for minting may have been tied to the threat of Alexander (Price 1993:32). The Persian minting of pseudo-Attic coins in Egypt is not surprising in light of the type's recognized status as official currency along the Nile and the fact that anonymous imitations of the coin had been minted in Egypt since, very likely, the early fifth century (Figueira 1998:530–532).

Arrian (*Anab.* 3.1.2) notes that Darius, Artaxerxes III's successor, appointed Mazaces to be the satrap of Egypt, presumably after Sabaces had fallen in battle at Issus. A year later (November 332) Mazaces peacefully turned all of Egypt over to Alexander at Memphis. Mazaces' Egyptian series, with the legend **MZDK** in place of **SWYK**, was likely minted within the year 333/32 and perhaps for a short time after. As noted, examples of his pseudo-Attic series are often indistinguishable from those of Sabaces, the only differences being the new legend and a new symbol, , replacing the symbol  found on his predecessor's coins. Both of these successive issues were minted on large, well-formed, and comparatively thin flans.


Remarking on the differences of fabric and style between the Egyptian issue of Mazaces and a number of presumed Babylonian issues bearing the legend **MZDK**, like those of groups I–V here, Newell (1938b:75) posited that Alexander, as an offer of gratitude for the surrender of Egypt, had given Mazaces an official position in Babylonia where he continued to mint his coins, a theory which has received mixed reviews. A number of historians, like P. Green (1991:269) have


¹⁴ The six new examples of the rare Artaxerxes issue that were found with the 1989 Syria hoard suggest a progression from an earlier frontal eye to a profile eye on the obverse. These examples with the profile eye are similar to what might be earlier issues of Sabaces. Except for the legend, some issues of Sabaces and Mazaces are virtually indistinguishable.









had little problem accepting Newell's theory. Others such as E. Badian have been disparaging; Badian, in fact, called it a "numismatist's myth" (1965:173 n. 4). As many have rightly noted, there is no evidence beyond the coins to back Newell's supposition. Two alternative explanations have been offered: A. B. Bosworth (1976) proposed a correction to Arrian's text that would make the garrison commander at Susa—the "Mazaros" noted only by Arrian—Mazaces, who minted the coins under Darius a few years before Alexander; Nicolet-Pierre (1979:229–230) suggested that these Babylonian coins might be imitations of imitations replicating the Egyptian Mazaces coins.¹⁵ As Lane Fox (1996:97) notes in reference to these explanations, both require stretching the historical, textual, and numismatic evidence beyond what it might easily bear; there may simply be an uncomfortable gap in the (textual) evidence concerning Mazaces in Babylonia. Certain features, however, of the Babylonian imitations, some of which relate to the lion staters, point to Mazaces as the direct minting authority, and might provide further (indirect) evidence of his presence in Babylonia after 331.

Only one group from the Iraq hoard, group III, has in addition to the Aramaic legend **MZDK** the symbol  which is found on Mazaces' Egyptian issues. Babelon's interpretation of this symbol as the Himyarite *kaph* has not fared well (1910:680); Lipinski's interpretation of it as a "schematized tripodal fire altar" may be closer to the truth (1982:29). More cautiously, one might interpret the symbol, like the symbol  on Sabaces' coins, as an arbitrary mark acting as a seal associated with a specific satrap. Sabaces' symbol, if it can be called such, appears on all of his issues regardless of whatever additional marks or inscriptions appear; only Mazaces' symbol and no other is found on his Egyptian coins and always in association with the inscribed name.¹⁶

¹⁵ Lipinski (1982:27) also suggested that the Egyptian Mazaces issues were imitations of the pseudo-Attic coins he believes the colony at Syene minted, thus making them also imitations of imitations.

¹⁶ Lipinski (1982:29) remarks that "[a] further Egyptian imitation of the Athenian tetradrachm is characterized...by the hieroglyphic sign ☉ of the sun, that might be the residue of the Greek Θ...in addition, there is the Persian personal name *mzdk*, 'Mazdaka', written in Aramaic letters." Lipinski seems to imply that there is an Egyptian issue with the symbol ☉ in place of the symbol . I am aware of no such Egyptian coin, nor does Lipinski provide an illustration or reference.

With the Babylonian coins, this is not the case. Not only is the "Mazaces symbol" often replaced by another symbol , or group of symbols, but just as often there is no symbol at all associated with the name, as on some of the lion staters of Mazaïos. It may be that the symbols used by Sabaces and Mazaces had a specific meaning or use within an Egyptian context, a meaning which changed or was adopted for a different use in Babylonia. Whatever their use in Babylonia, however, it is significant that while the symbols change, the name inscribed does not.


On the Babylonian imitations there are three, or possibly four (if the second is not a variation of the first), major symbols: A) , B) , C) , and D) , augmented on only a few examples by the auxiliary symbols  and . The delta appears with both symbols A and C, although it is rotated to left on the sole example where it appears with A (X10); the second group of auxiliary symbols appears only with A (X12). A glance at the distribution of the major symbols among groups I-V (see Catalogue) reveals that symbol A is found only in group III, symbol B in group IV. The differences in fabric and style between groups III and IV are enough to suggest either that there were two different *officinae* producing these two different groups, or that they were chronologically distinct issues.¹⁷ The regimented appearance of the different symbols within these groups further suggests that the symbols were used in some manner by the same or different *officinae*. Like the cryptic symbols and monograms found on the Alexander imperials, these marks, or the lack of marks on coins of groups I, II, and V, may have served for control and tracking purposes, denoting sub-officials, source of bullion used, or mint marks identifying different *officinae* or different issues from the same workshop. Although the imitations do not share any of the symbols found on the imperial issues, two of the symbols,  and , might be related to similar symbols found on some lion staters.¹⁸ The use of all these

¹⁷ Price (1991a:68) noted the difference in fabric and posited two mints for the coins, mint A and mint B.

¹⁸ The delta symbol is found on a number of lion staters. In her dissertation, Waggoner (1968) suggested that the use of this symbol on the lion staters dates to the years between 329/28 and 323/22. One lion stater in the ANS collection

symbols in an apparently ordered fashion denotes centralized oversight, which further suggests that these imitations were an "official" coinage, as the similar series had been in Egypt.

There is also another feature shared by the coins of groups I–V, as well as the lion staters and the gold darics minted in Babylon. Numerous examples of all these types display two small, diametrically opposed spurs, seams, or flanges on the edge of the flan, a feature which appears only on group I–V coins and on no other owls from this hoard or elsewhere.¹⁹ Both Hill (1922a:cxlii, 1922b) and Le Rider (1972:7) have commented on this feature, suggesting that the flanges or seams were the result of two hemispherical mold-halves poorly joined; a similar trait and method of production is noted on coins from Sicily. While this explanation holds for a number of these coins, particularly those with thick flans (c. 6 mm thick, e.g., nos. 61, 65, 70, 72) that suggest even greater thickness (i.e., a sphere) before striking, it is not satisfactory in all cases. On a number of the imitations and lion staters, this feature is clearly not a seam or flange, but rather a spur. These flans were likely formed by pouring the molten metal into a stone (?) matrix of coin-shaped depressions linked by small channels (see Moesta and Franke 1995:100, pl. 59). Once the metal had hardened, the connected flans were removed from the matrix and separated from one another by either cutting or breaking the joining metal which had hardened in the channels. The spurs are the remnants of the metal from the channels, neither filed off nor hammered flat. Among groups I–V there is no apparent consistency in terms of what flans were produced using one or the other method. As in other areas of the East, those producing coins (for the first time?) might simply have adopted whatever method of flan production seemed most intuitive,

(73.194.1) bears the symbol ☉ in exergue in addition to the monogram  above the lion. The use of this monogram dates, according to Waggoner, to the time of Philip III. The use of the symbol ☉ on this stater is the only such example that I have located. Although this coin likely dates to a period after 323, it suggests an administrative link between the lion staters and imitations of groups I–V.

¹⁹ The coins from the Iraq hoard on which this feature is most obvious are group I nos. 59, 62, 64, 65, 69, 71, 72; group II no. 73; group III nos. 77, 78, 79, 81, 96; group IV nos. X20, 90, 93, 94; group V nos. X24, X25.

or best suited to the materials and skills available.²⁰ In Babylonia, the methods adopted, for these coins at least, bore no direct relationship to current Greek methods of flan production, despite the fact that minting was unquestionably under Macedonian oversight.²¹ The basic relationship shared by the coins of groups I–V, the lion staters, and the gold darics indicated by this flan trait might again point to official control in the production of the Babylonian imitations. All three of these coinages were produced, if not in the same workshops, then workshops that were clearly related to one another by a distinctive, localized production method.

There may be one other parallel between the lion staters and the imitations of groups I–V, namely, that Mazaces' and Mazaïos's fates and those of their respective coinages may have followed somewhat similar lines. Mazaïos, who became satrap of Cilicia in 361, struck various types of silver coins at Tarsus, including the precursor to the lion staters minted in Babylonia (see Bellinger 1963:60f). Opposing Alexander at the battle of Gaugamela, Mazaïos, who by that time had been appointed satrap of Babylonia by Darius, surrendered Babylon to the Macedonians a month or so after the battle (October 331). Both Curtius (5.1.44) and Arrian (3.16.4) record that Alexander reinstated Mazaïos as satrap of Babylon in addition to leaving a garrison and administrative staff behind in the city. Sometime shortly thereafter the new series of lion staters appeared which, like the Cilician issues, bore the seated Cilician god Baaltars on the obverse and a lion on the reverse along with Mazaïos's name in Aramaic. Minted now on an Attic rather than Persic standard, there were at least four varieties or issues of the staters with the Aramaic legend, perhaps accounting for the production years 331–328.²² When Mazaïos died in 328, his name was removed from the dies and was replaced with issue

²⁰ See, for example, Huth (1998) for Arabian imitations minted on folded flans.

²¹ Gold darics and double darics on the Persian standard were among the first coins produced by the Macedonians in Babylon; often these coins bear Macedonian control marks. See Price (1991b:451–452) and Bellinger (1963:66–72).

²² Babelon (1910:475–478) published four examples, one with no extra symbol and one each with a wreath, a serpent, and a K. If the use of different symbols followed normal Greek practice of a different symbol every year, all the years of Mazaïos' satrapy under Alexander would be accounted for.

marks that often parallel those of the imperial coinages; these “Greek” lion staters continued to be minted until the beginning of the third century and in other locations—Susa and Seleucia—beyond Babylon.

If we accept Price’s date of 323/22 BC for the burial of the Iraq hoard, we have a certain *terminus ante quem* for all of the coins. Mazaces’ Egyptian issues, if they were coined in the year 333/32, or for a while later, provide a round *terminus post quem* since presumably the Babylonian imitations postdate those from Egypt.²³ Mazaces’ presence is attested with Alexander in Memphis in November 332; Macedonian hegemony in Babylonia was secured by October 331. In the intervening months, Mazaces certainly could have flown to the Persian forces in Babylonia and continued his coinage there. However, his surrender of Egypt to the Macedonians would have ensured a cold if not fatal reception by the Persian King, so he likely remained with Alexander’s forces. There is little doubt that Mazaios began minting his new staters in Babylon in late 331 or early 330, perhaps at the same time the Macedonian darics began to appear. This inauguration of minting activity in Babylon may also have prompted the advent of Mazaces’ new imitations.

As the Babylonian staters of Mazaios show, the Macedonians did make concessions to the Persian practice of naming the direct minting authority as had been done in Cilicia and Egypt before; a concession which has long been problematic, if not shocking, for historians and numismatists alike (see Bellinger 1963:62). In this context, there would be little point in placing Mazaces’ name on the coins if he were not indeed responsible for them, especially through the course of numerous issues or on products from different *officinae*, as the symbols on the coins suggest. Despite the changes in symbols found on the coins, like the changes in symbols found on the earliest Babylonian lion staters, the legend **MZDK** remains steadfast in place. Erasing any indication of Mazaces’ responsibility would have been as simple as either removing the name or any inscription entirely or reverting to the original Athe-

²³ Lane Fox (1996:97) raises the possibility that the Babylonian coins may have been minted in Babylonia under Darius in late 333. Mazaces then moved west to coin the Egyptian issues in 333/32. However, Lane Fox also notes that this scenario is not very likely.

nian ethnic in place of the name. This may have been what eventually happened. The Athenian ethnic appears in groups II and III; in group III one obverse die shares two reverses, one with the Aramaic legend and one with the Greek. Furthermore, one coin from group I (no. 62) and a recently surfaced coin with a group IV obverse show no trace at all of a legend, Aramaic or Greek.²⁴ As Mazaïos's name had been removed from his staters following his death, Mazaces' name might also have been removed from his Athenian types following a loss of authority. And again, as Mazaïos's stater dies had been retooled or formed anew to reflect the change, so the dies for Mazaces' imitations might also have been altered. Admittedly, there is not enough evidence at this point to establish a chronology for the Babylonian imitations, but the change of legends in groups I–V, on analogy with the lion staters, is suggestive of change in authority. Choice of a legend, or no legend, in this context would not be left to the decision of a die-cutter. The minting of the Babylonian imitations may have begun concurrently with the lion staters, and like the lion staters, continued for time after the original incipient of the coinage, Mazaces, had ceased to play a role in their production.

As has long been recognized the fundamental historical problem regarding the Babylonian production of lion staters is answering the question "Why?" By analogy, the question might also be extended to the imitations. Why did the Macedonians allow turncoat Persians to mint copies of their earlier satrapal coins in their own name in Babylonia? The answer eludes us, but it might be related to an administrative need for coinage in an area that previously had none, or little. As textual and hoard evidence indicate, Babylonia, like most of the Near East, might not have been fully monetized before Alexander, or for some time thereafter (Joannès 1995:1478). A number of cuneiform

²⁴ This virtually unworn coin came from the small, unprovenanced 1996 Lion Stater hoard. The reverse die was well centered and clearly shows that no legend, Greek or Aramaic, had been cut. In addition to this coin, the hoard contained one imperial tetradrachm from Ake, seven lion staters (one with Mazaïos's name, one with no legend, and the rest with imperial marks), five other Athenian imitations (one group III with MZDK legend, the rest with the Athenian ethnic). The contents of the hoard point to a Babylonian provenance.

texts, for example, such as the Murašû archives, deal with transactions of various sorts requiring payment in silver. While these documents make it certain that silver and silver-equivalent credits were in general use in late fifth-century Babylon, M. Stolper, the archives' major commentator, considers the money in use to have been silver in whatever form available, not necessarily minted metal (1985:29 n.110, 151). Furthermore, only one hoard from the region (*IGCH* 1747 = *CH* VII.90), uncovered in the last century, is securely dated to the period before Alexander's ingress (c. 385 BC). While this hoard does contain a small number of Persian and Greek silver coins, including several fragmented Athenian owls, the additional presence of silver jewelry, vessel fragments, and amorphous lumps, indicates again that exchange in Babylonia at this time was based on bullion weight; coin type was incidental (Reade 1986; Robinson 1950; Naster 1970). Other fourth-century hoards from Babylonia either postdate or are contemporaneous with Alexander.²⁵ Whatever use of coin there might have been beforehand, a greater use of coin as coin in the local Babylonian economy seems to have occurred with the events surrounding Alexander, as Babylon, perhaps for the first time, began to mint a number of different types of coins (Mørkholm 1991:48; Price 1991b:73).

Most of the Babylon mint's production of imperial issues and possibly gold darics can be tied to troop payments. Likewise, the Porus coins and imperial issues were undoubtedly related to troop payments of one sort or another (Lane Fox 1996; Thompson 1984). A similar purpose remains a possibility for the lion staters and Athenian imitations, but not one wholly without problems. Diodorus (17.64) notes that after his month-long stay in Babylon, Alexander gave the newly formed garrison of the city 1000 talents of silver with instructions to raise as many troops as possible. Perhaps the Babylon garrison, in turn, compelled Mazaces and Mazaïos to produce coins for such a levy. Objections to this purpose, for the lion staters at least, have been voiced already. As Bellinger remarked, there would be little reason to mint a separate coinage(s), and Persian types at that, for

²⁵ *IGCH* 1748, 1749, 1750, 1751, 1752, and 1753. Schlumberger (1953:11 no. 42) dates *IGCH* 1762 (= Noe 1109) to the first half of the fourth century. More recent work on this hoard has assigned a date of c. 250 BC.

the convenience of a single body of mercenaries (1963:63). Also, the named Babylonian lion staters and imitations that have thus far come to light have been found only in Babylonia, in fact mostly in or near Babylon itself. Based on the evidence available, these coins, unlike the imperial issues, do not seem to have circulated much beyond the city, not a pattern consistent with on-the-move mercenaries. While Alexander did allow some local coinages to continue mostly for local purposes, the troops were likely paid, when coins were used, with his own imperial issues or special propagandistic types like the Porus coins.

Both Bellinger (1963:62, 66) and Newell (1938b:88) have offered suggestions for the purpose of the imitations and lion staters within a local context: for trade or to aid the local economy or, in the case of the lion staters, as "temple money", money associated with or for use by the great temple of Bel (Newell 1938a:106 n. 14). This latter suggestion drew heavy fire from Bellinger (1963:64). While neither explanation is entirely satisfactory, both might be nuanced slightly. One could see the production of lion staters and imitations as a conscious attempt to monetize the economy for local administrative purposes. In their satrapal capacities elsewhere, Mazaces and Mazaios had used coin and perhaps realized the administrative advantage of using this type of exchange medium. Resuming official responsibilities in Babylonia, they may have coined more for their own administrative benefit than at the specific request of the Macedonians. Selection of their own types, the lion staters and Athenian imitations, would be a natural and perhaps innocuous choice; there were no local Babylonian types for them to copy. Factors of workmanship, widely varying weights and dies, particularly with the pseudo-Attic coins, give the impression that the group I-V imitations and lion staters were minted in haste; Waggoner has commented on a similar apparent haste in the minting of imperial tetradrachms at the Babylon mint (1979:272). This may explain the troublesome fact that on some of the imitations, primarily in groups I and III, the Aramaic legend is so sloppy that it cannot be read with certainty; Nicolet-Pierre (1979:230), in fact, claims to have read **GWLDR** on the worn reverse of an example from group I (X6).²⁶ Hasty production may have led to the employ-

²⁶ This coin, in the ANS collection, unfortunately could not be located for me to confirm or deny this reading. Although much has been written concerning the

ment of numerous less-than-skilled die cutters, or die cutters who were unfamiliar with Aramaic; many of the coins display an equal unfamiliarity with Greek characters. When one looks for specific reasons for hastily minted coins meant for local circulation, which likely included a number of denominations,²⁷ any number of possibilities come to mind: inter-regional trade, taxation, or public works. Given the evidence currently available, it is perhaps wisest not to favor one reason over another or, for that matter, to search for a more specific minting location within Babylonia, such as Opis or Uruk-Orchoi,²⁸ for the imitations.

Explaining the appearance of the remaining Attic-type coins in the Iraq hoard is perhaps less problematic. Unquestionably Alexander's train brought with it significant numbers of authentic and imitative Attic-type coins. As communication between the East and the West became less restricted, and coin use in the East following in the wake

reading of the Aramaic inscriptions on the Babylonian imitations, I feel all were intended to read **MZDK**. There are only subtle differences in the fourth-century forms of the Aramaic characters *daleth*, *nun*, *resh*, and *kaph*, which a hasty or illiterate die cutter could easily obscure. The fact that many of these inscriptions were written backwards, or have one or two characters reversed, suggests that not all the die cutters knew what they were cutting or were familiar with the script. Moreover, many of the inscriptions are either partially or wholly off-flan or worn to the point of (near) illegibility, which seems to be the case in the illustration of Nicolet-Pierre's **GWLDR** example (1979:pl. 26 f). Where the Aramaic is legible, or mostly so, the inscriptions can be rendered as **MZDK**.

²⁷ Nicolet-Pierre (1979:pl. 26 i) illustrates an example of a Babylonian **MZDK** drachm (weight 4.09 g), the existence of which suggests that the imitations, like the lion staters, were produced in a series of different denominations and thus that the coinage could be used not only for large transactions but for smaller daily transactions as well.

²⁸ Newell (1938b:87–88) suggested these two locations for the mints of the imitations. The generally poor quality of the coins, he felt, excluded their production at the Babylon mint, which seemed to produce higher-quality issues. I am not convinced by this thesis since examples of finely and poorly made coins can be found among all Babylonian types: imitations, lion staters, darics, and imperial issues. All Babylonian types may have been produced at any number of mints throughout the region, which also could explain factors of variety, style, and workmanship. Multiple mints, as in the case of the imitations, still could have been under the control of the same governor.

of the coin-using Macedonians became more commonplace, a more extensive eastward flow of the owl is to be expected. As elsewhere, this likely gave rise to the production of local (anonymous) imitations, distinct from Mazaces' Persian imitations. The die links within the groups and the stylistic similarities among the coins of groups VI–XII suggest that these coins had not traveled far from the place where they were minted and therefore are likely local products. Some of these anonymous imitations might also have been "official" Babylonian issues. Significantly, however, these imitations copy the Athenian owl, and not the Persian. Whatever the purpose of Mazaces' Babylonian imitations, his named coins do not appear in the same quantities as the anonymous types. Perhaps they could not compete with the recognized status of the Athenian owl, a status that was soon to be overwhelmed by the Alexander-type tetradrachms in the East and elsewhere.

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CATALOGUE

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die	Links	Museum Number
												Links Obverse	Reverse	
Probable Attic														
1	Pi 2/3	Yes	Hoop	1	2	Yes	Countermark 1 Chisel cut, rev. Chisel cut, rev.	AGE		16.05 g	9:00	1	1	BM 2.4.39
2	Pi 2/3	Yes	Disk	1	2	Yes		AGE		16.78 g	9:00	2	2	BM 2.4.16
3	Pi 4/5	Yes	Disk	1	2	Yes		AGE		16.64 g	9:00	3	3	BM 2.4.9
4	Pi 4/5	Yes	Disk	1	(worn)	No		AGE		16.67 g	9:00	4	4	BM 2.4.63
5	Pi-style	Yes	Disk	1	2	Yes	Countermark 2 Countermark 3 Countermark 4 Two chisel cuts, rev.	AGE		16.45 g	9:00	5	5	BM 2.4.30
6	Pi-style	No	Disk	1	2	Yes		AGE		16.96 g	9:00	6	6	BM 2.4.20
7	Pi 4/5	Yes	Disk	1	1	Yes		AGE		16.54 g	8:00	7	7	BM 2.4.12
8	Pi-style	Yes	Disk	1	1	No		AGE		15.75 g	9:00	8	8	BM 2.4.11
9	Pi 2/3	No	Disk	1	2	Yes	Chisel cut, rev. Chisel cut, rev. Countermark 5; three chisel cuts, rev.	AGE		16.63 g	9:00	9	9	BM 2.4.13
10	Pi-style	Yes	Disk	1	2	Yes		AGE		16.68 g	9:00	10	10	BM 2.4.13
11	Pi 2/3	Yes	Disk	1	2	No		AGE		16.90 g	9:00	11	11	BM 2.4.59
12	Pi 1/2	Yes	Hoop	1	1	Yes		AGE		16.82 g	8:00	12	12	BM 2.4.60
13	Pi 2/3	Yes	Disk	1	2	No	Countermark 6 Large circular punch, rev. Countermark 7 three chisel cuts, obv., chisel cut, rev.	AGE		17.28 g	9:00	13	13	BM 2.4.28
14	Pi 2/3	Yes	Disk	1	2	Yes		AGE		16.36 g	9:00	14	14	BM 2.4.29
15	Pi 2/3	Yes	Disk	1	1	Yes		AGE		16.77 g	9:00	15	15	BM 2.4.23
16	Pi 2/3	Yes	Disk	1	2	Yes		AGE		15.86 g	8:30	16	16	BM 2.4.8
17	Pi-style	Yes	Disk	1	(worn)	(worn)	Countermark 8 chisel cut, rev.	AGE		16.81 g	9:30	17	17	BM 2.4.33
18	Pi 2/3	Yes	Disk	1	1	Yes		AGE		16.70 g	8:00	18	18	BM 2.4.13
19	Pi 2/3	Yes	Disk	1	(worn)	(off-flan)		AGE		16.68 g	9:30	19	19	BM 2.4.49
20	Pi 2/3	Yes	Disk	1	(cut)	Yes		AGE		16.57 g	11:00	20	20	BM 2.4.5

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
21	Pi-style	Yes	Disk	1	(cut)	Yes	Three chisel cuts, rev.	AGE		16.81 g	9:00	21	21	BM 2.4.61
22	Pi 2/3	Yes	Disk	1	2	Yes		AGE		16.81 g	9:00	22	22	BM 2.4.7
23	Pi-style	Yes	Disk	1	1	Yes		AGE		16.05 g	9:00	23	23	BM 2.4.46
24	Pi-style	Yes	Disk	1	1	No		AGE		16.85 g	9:00	24	24	BM 2.4.42
25	Pi 2/3	Yes	Disk	1	2	Yes		AGE		16.39 g	9:00	25	25	BM 2.4.19
26	Pi 4/5	Yes	Disk	1	1	Yes		AGE		16.23 g	9:00	26	26	BM 2.4.51
27	Pi 2/3	Yes	Disk	1	(cut)	Yes	Four chisel cuts, rev.	AGE		16.74 g	10:00	27	27	BM 2.4.44
28	Pi 4/5	Yes	Disk	1	2?	(cut)	Chisel cut, rev.	AGE		16.70 g	9:00	28	28	BM 2.4.21
29	Pi-style	Yes	Disk	1	2	No		AGE		16.78 g	9:00	29	29	BM 2.4.36
30	Pi 3/4	Yes	Disk	1	2	Yes	Countermark 9	AGE		16.79 g	9:00	30	30	BM 2.4.40
31	Pi 2/3	Yes	Disk	1	2	No	Chisel cut, rev.	AGE		16.70 g	6:00	31	31	BM 2.4.10
32	Pi-style	Yes	Disk	1	(cut)	(cut)	Chisel cut, rev.	AGE		16.32 g	9:00	32	32	BM 2.4.18
33	Pi-style	No	Disk	1	(cut)	Yes	Chisel cut, obv.	AGE		16.84 g	8:00	33	33	BM 2.4.32
34	Pi-style	No	Disk	1	(worn)	No	chisel cut, rev.	AGE		16.24 g	8:00	34	34	BM 2.4.6
35	(worn)	(worn)	(worn)	(worn)	(worn)	Yes	Countermarks 10, 11	AGE		15.50 g	9:00	35	35	BM 2.4.35
36	Pi 2/3	Yes	Disk	1	2	No	Countermark 12	AGE		16.54 g	9:00	36	36	BM 2.4.3
37	Pi-style	Yes	Disk	1	1	No	Countermark 13	AGE		16.42 g	9:00	37	37	BM 2.4.4
38	Pi 2/3	No	Hoop	1	(worn)	(worn)	Countermarks 14, 15	AGE		16.81 g	9:00	38	38	BM 2.4.24
39	Pi 1/2	Yes	Disk	1	2	No	Chisel cut, obv.; countermark 16	AGE		16.84 g	8:00	39	39	BM 2.4.17
40	Pi-style	Yes	Disk	1	2	Yes		AGE		16.14 g	9:00	40	40	BM 2.4.31
41	Pi 2/3	No	Disk	1	2	Yes	Chisel cut, obv.	AGE		16.65 g	8:00	41	41	BM 2.4.62
42	Pi 4/5	No	Disk	1	2	Yes		AGE		15.44 g	9:00	42	42	BM 2.4.50
43	(off-flan)	Yes	Disk	(worn)	1	No		AGE		15.21 g	9:00	43	43	BM 2.4.43
44	Pi-style	Yes	Disk	1	(cut)	No	Chisel cut, rev.	AGE		16.44 g	9:00	44	44	BM 2.4.34
45	Pi-style	Yes	Disk	1	(cut)	(cut)	Chisel cut, obv.; chisel cut, rev.	AGE		16.61 g	9:00	45	45	BM 2.4.37

Probable Attic (?)

46	Pi-style	Yes	Disk	1	(worn)	(worn)		AGE		16.49 g	9:00	46	46	BM 2.4.15
47	Pi 4/5	Yes	Disk	1	2	Yes		AGE		16.13 g	9:00	47	47	BM 2.4.27

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links	Die Links Reverse	Museum Number
48	Pi 2/3	Yes	Disk	1	n/a	No	Chisel cut, rev.	AGE		16.77 g	9:00	48	48	BM 2.4.197
49	Pi 2/3	Yes	Hoop	1	2	Multiple	Double strike, obv.; chisel cut, obv.; chisel cut, rev.	AGE		16.50 g	9:00	49	49	BM 2.4.53
50	Pi 2/3	No	Disk	1	2	Yes	Pellet, obv.; chisel cut, obv.	AGE		16.64 g	9:00	50	50	BM 2.4.133
51	Pi-style	No	Hoop	1	2	No	Three chisel cuts, obv.	AGE		16.85 g	9:00	51	51	BM 2.4.48
52	Pi 2/3	No	Hoop	1	2	Yes	Pellet, obv.	AGE		16.88 g	9:00	52	52	BM 2.4.25
Fifth-Century Style														
53	(worn)	(worn)	(worn)	1	(worn)	Yes	Countermark 17; chisel cut, obv.; two chisel cuts, rev.	AGE		16.64 g	12:00	53	53	BM 2.4.1
54	(worn)	No	Hoop	(worn)	(worn)	(worn)	Countermarks 13, 18; chisel cut, rev.	AGE		16.57 g	9:00	54	54	BM 2.4.2
55	5th c.	(worn)	(worn)	(worn)	2	No	Chisel cut, rev.	AGE		16.87 g	9:00	55	55	BM 2.4.138
56	5th c.	No?	Disk	(worn)	(cut)	Yes	Two chisel cuts, rev.; mint mark 1	AGE		16.93 g	9:00	56	56	BM 2.4.134
57	5th c.	No	Disk	1	(cut)	(cut)	Two chisel cuts, rev.; mint mark 2	AGE		16.55 g	9:00	57	57	BM 2.4.137
58	5th c.	No	Disk	1	2	Yes	Mint mark 1	AGE		16.76 g	9:00	58	58	BM 2.4.136
Imitations														
Group Ia														
59	Double volute	No	Hoop	1	0	No	Chisel cut, rev.	(off-flan)		16.73 g	8:30	59	59	BM 2.4.101
60	Double volute	No	Hoop	1	0	(worn)		(traces)	☉	16.94 g	12:00	60	60	BM 2.4.95

OWLS FROM THE 1973 IRAQ HOARD

49

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
61	Double volute	No	Hoop	1	(off-flan)	(off-flan)		(off-flan)	☉	16.86 g	2:00	61	61	BM 2.4.103
X1	Double volute	No	Hoop	1	3?	Yes	Owl to l.	MZDK?		17.09 g	10:00	X1	X1	ANS1944.
X2 ^a	Double volute	No	Hoop	1	3?	(off-flan)	Owl to l.	MZDK?		16.69 g	2:00	X2	X2	100.81367
Group Ib														
62	Double volute?	(worn)	(worn)	(worn)	(cut)	(cut)	Chisel cut, rev.	None		16.25 g	9:00	62	62	BM 2.4.89
63	Double volute	No	Hoop	1	(off-flan)	(off-flan)	Owl to l.	(off-flan)		16.78 g	8:00	63	63	BM 2.4.98
64	Double volute	No	Hoop	(worn)	3	(off-flan)		(traces)		16.58 g	10:00	64	64	BM 2.4.88
65	(off-flan)	No	Hoop	(off- flan)	(off-flan)	(off-flan)		(traces)		16.78 g	6:00	65	65	BM 2.4.99
66	Double volute	No	Hoop	(worn)	2	(off-flan)		(off-flan)		16.81 g	9:00	66	66	BM 2.4.96
X3	Double volute	No	Hoop	0	n/a	No		MZDK		16.61 g	8:00	X3	X3	ANS 60. 176
Group Ic														
67	Double volute	No	Hoop	(worn)	n/a	(worn)	Owl's body feathers unusual; chisel cut, rev.	(off-flan)		16.40 g	3:00	67	67	BM 2.4.94
68	Double volute	No	Hoop	1	n/a	(off-flan)	Owl's body feathers unusual; two chisel cuts, rev.	MZDK?		16.80 g	9:00	68	68	BM 2.4.93

^a Le Rider 1972:5 no. 5.

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
69	Double volute	No	(worn)	(worn)	3?	(worn)		(traces)		17.17 g	10:00	69	69	BM 2.4.90
70	Double volute	No	Hoop	1	n/a	(off-flan)	Owl's body feathers unusual	(off-flan)		16.94 g	3:00	70	70	BM 2.4.97
71	Double volute	No	Hoop	1	n/a	No	Owl's body feathers unusual	MZDK?		16.71 g	6:00	71	71	BM 2.4.92
72	Double volute	(cut)	(cut)	(worn)	(worn)	No	Chisel cut, obv.	(off-flan)		16.76 g	12:00	72	72	BM 2.4.100
X4 ^b	Double volute	No	Hoop	1	n/a	Yes?	Owl's body feathers unusual	MZDK?		16.24 g	5:00	X4	X4	
X5 ^c	Double volute	No	Hoop	1?	3	Yes		none?		?	?	X5	X5	
X6 ^d	(worn)	(worn)	(worn)	(worn)	3?	Yes		(traces)		16.68 g	6:00	X6	X6	
Group II														
73	Uncertain	Yes	Hoop	2	3	No	Two chisel cuts, rev.	AΘE?		16.66 g	8:00	73	73	BM 2.4.57
74	Double volute	No	Hoop	2	(worn)	(off-flan)	Two chisel cuts, rev.	(off-flan)		16.56 g	9:00	74	74	BM 2.4.102
X7	Abstract pi-style	No	Hoop	2	2	No	Symbol to l. of owl?	MZDK	⊙	17.49 g	7:00	X7	X7	ANS 1944. 100.81366
Group IIIa														
75	Pi-style	No	(worn)	2	2	No		(off-flan)		16.79 g	9:00	75	75	BM 2.4.121
76	Pi-style	(cut)	(cut)	2	2	No	Two chisel cuts, obv.	AΘE?		17.12 g	8:00	76	76	BM 2.4.122
77	(cut)	(worn)	Disk	2	n/a	No	Two chisel cuts, obv.	AΘE		16.74 g	10:00	77	77	BM 2.4.114
78	Pi-style	Yes	Disk	2	2	No	Single chisel cut, rev.	MZDK?	⌘	16.96 g	9:00	78	78	BM 2.4.78
79	Pi-style	(worn)	(worn)	2	2	No	Single chisel cut, rev.	MZDK	⌘	17.04 g	9:00	79	79	BM 2.4.83

^b Le Rider 1972:5 no. 4.

^c Nicolet-Pierre 1979:pl. 26 e.

^d Nicolet-Pierre 1979:pl. 26 f.

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
80	(off-flan)	(cut)	Disk	(worn)	2	No	Chisel cut, obv.	(worn)	𐎶	16.83 g	9:00	80	80	BM 2.4.81
X8 ^c	Pi-style	Yes	Disk	2	3	No	Chisel cut, obv.	AGE	𐎶	17.57 g	7:00	-X8	X8	ANS 1944.
X9 ^f	Pi-style	Yes	Disk	2	(cut)	(cut)	Chisel cut, rev.	(off-flan)	𐎶	?	?	X9	X9	100.81365
X10	Pi-style	Yes	Disk	2	3	Yes		(traces)	𐎶 Δ	17.20 g	8:00	X10	X10	ANS 1944.
Group IIb														
81	Pi-style	(worn)	(worn)	(worn)	2	No	Two chisel cuts,	AGE?		15.32 g	9:00	81	81	BM 2.4.120
82	Pi-style	Yes	(worn)	2	2	No	obv.; two chisel cuts, rev.	AGE?		17.14 g	8:00	-82	-82	BM 2.4.107
83	Pi-style	Yes	Hoop	(off-flan)	2	(off-flan)	Roughly rectangular flan	(traces)	𐎶	16.59 g	7:00	83	83	BM 2.4.74
X11 ^g	Pi-style	(worn)	(worn)	2	(cut)	(cut)	Three chisel cuts, rev.	AGE?		?	?	-X11	X11	
X12 ^h	Pi-style	Yes?	Disk?	2	2	Yes		(traces)	𐎶 𐎶 𐎶	?	?	-X12	X12	
X13	Pi-style	Yes	Disk	2	3	No		(off-flan)	𐎶	17.18 g	9:00	X13	X13	ANS "35"
X14 ⁱ	Pi-style	Yes	Disk	2	2	No		MZDK	𐎶	16.95 g	?	X14	X14	
Group IIc														
84	Pi-style	Yes	(worn)	(worn)	3	(off-flan)	Chisel cut, obv.	(off-flan)	𐎶	16.53 g	9:00	84	84	BM 2.4.108
X15	(off-flan)	Yes	Disk	2	3	No		(traces)	𐎶	17.14 g	9:00	X15	X15	ANS 1944.
Miscellaneous Group III														
85	Pi-style	(cut)	Disk	2	(worn)	No	Chisel cut,	(traces)		16.82 g	9:00	85	85	BM 2.4.80
X16	Pi-style	(cut)	Disk	1	2	Yes	obv.; chisel cut rev.	MZDK?		16.90 g	6:00	X16	X16	ANS "38"

^c Nicolet-Pierre 1979:pl. 26 d.^f Nicolet-Pierre 1979:pl. 26 c.^g Nicolet-Pierre 1979:pl. 26 a.^h Nicolet-Pierre 1979:pl. 26 b.ⁱ Babelon 1910: no. 1095.

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
X17	Pi-style	Yes	Disk	1	(cut)	No		(off-flan)		15.74 g	9:00	X17	X17	ANS "33"
X18 ^j	(worn)	(worn)	Disk	2	(worn)	No		MZDK?		17.47 g	?	X18	X18	
Group IVa														
86	Abstract pi-style	Yes	Disk	(worn)	(worn)	No	Chisel cut, obv.	MZDK		16.56 g	8:00	86	86	BM 2.4.72
87	Abstract pi-style	Yes	Disk	(worn)	2	No	Chisel cut, rev.	(off-flan)		16.72 g	9:00	87	87	BM 2.4.116
88	(worn)	Yes	Disk	2	2	(cut)	Chisel cut, obv.; chisel cut, rev.	(traces)		16.70 g	3:00	88	88	BM 2.4.73
89	Abstract pi-style	Yes	Disk	2	2	(off-flan)	Chisel cut, rev.	(off-flan)		17.07 g	3:00	89	89	BM 2.4.110
90	Abstract pi-style	Yes	Disk	2	(cut)	(cut)	Two chisel cuts, obv.; chisel cut rev.	(traces)		17.01 g	11:00	90	90	BM 2.4.75
X19	Abstract pi-style	Yes	Disk	2	2?	(worn)		(off-flan)		15.80 g	2:00	X19	X19	ANS 1944.
X20	Abstract pi-style	Yes	Disk	2	2	Yes	Chisel cut, obv.	MZDK		17.16 g	11:00	X20	X20	100.81369 ANS 1944. 100.81368
Group IVb														
91	Pi-style	(cut)	(cut)	3	2	No	Two chisel cuts, obv.; chisel cut, rev.	MZDK		16.46 g	6:00	91	91	BM 2.4.76
92	Pi-style	(worn)	(worn)	3	2	(cut)	Three chisel cuts, rev.	(traces)		16.28 g	6:00	92	92	BM 2.4.77
93	Pi-style	Yes	Hoop	3	2	Yes	Chisel cut, rev.	(traces)		16.73 g	8:00	93	93	BM 2.4.71
94	Pi-style	Yes	Hoop	3	2	(worn)		(off-flan)		16.91 g	5:00	94	94	BM 2.4.125
X21 ^k	Pi-style	Yes	Hoop	3	2	Yes	Symbol to l. of owl	MZDK		17.21 g	?	X21	X21	

^j Svoronos 1975:pl. 108.29.^k Diebolt and Nicolet-Pierre 1977:pl. 23.3 (= Svoronos 1975:pl. 108.25)

OWLS FROM THE 1973 IRAQ HOARD

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Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
Group IVc														
95 ^l	Pi-style	Yes	Disk	1	2	Yes	Chisel cut, obv.; two chisel cuts, rev.	MZDK	☉	16.71 g	9:00	95	95	BM 2.4.74
96	Pi-style	Yes	Disk	1	1	(cut)		MZDK	☉	16.76 g	7:00	96	96	
Group IVd														
97	Pi-style	(worn)	(worn)	1	2	(cut)	Chisel cut, obv.; two chisel cuts, rev.	MZDK	☉	16.78 g	3:00	97	97	BM 2.4.70
98	Pi-style	(cut)	(worn)	1	2	No	Chisel cut, obv.	(off-flan)		16.30 g	3:00	98	98	BM 2.4.109
X22 ^m	Pi-style	Yes	Hoop	1	2	No		MZDK	☉	17.20 g	?	X22	X22	
X23 ⁿ	Pi-style	Yes	Hoop	1	2	No		MZDK	☉	16.91 g	?	X23	X23	
Group V														
99	Pi-style	Yes	Hoop	(off- flan)	n/a	No		MZDK?		16.29 g	5:00	99	99	BM 2.4.86
X24	Pi-style	Yes	Hoop	1	3	No	Chisel cut, obv.	MZDK		16.64 g	12:00	X24	X24	ANS 1944.
X25	Pi-style	Yes	Hoop	1	3	No		MZDK		15.91 g	10:00	X25	X25	100.31372
X26 ^o	Pi-style	Yes	Hoop	1	3	(off-flan)		MZDK		16.32 g	6:00	X26	X26	ANS 1944. 100.81370
Miscellaneous Babylon														
100	Abstract pi-style	Yes	Disk	1	3	(cut)	Chisel cut, rev.	MZDK?		16.38 g	8:00	100	100	BM 2.4.91
101	Pi-style	No	Disk	2	2	No		(off-flan)		16.26 g	10:00	101	101	BM 2.4.84
102	Pi-style	No	Hoop	3	1	No		MZDK		16.97 g	9:00	102	102	BM 2.4.85

^l Published previously by Merckholm (1974a:pl. 1.6).

^m Svoronos 1975:pl. 108.23.

ⁿ Svoronos 1975:pl. 108.24.

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
103	Abstract pi-style	Yes	Disk	1	2	Yes	Chisel cut, rev.	MZDK?	☉	16.38 g	9:00	103	103	BM 2.4.82
104	Abstract pi-style	Yes	Hoop	1	3	(off-flan)		AGE		16.62 g	8:00	104	104	BM 2.4.115
105 ^p	(off-flan)	No	?	1	1	No		AGE		?	?	105	105	
X27 ^q	Pi-style (worn)	(worn)	(worn)	(worn)	2	(worn)	Punch mark center, rev.	MZDK	☉	15.28 g	6:00	X27	X27	
X28	Abstract pi-style	No	Disk	1	3	(cut)	Chisel cut, rev.	(traces)	☉	16.87 g	2:00	X28	X28	ANS "31"
X29 ^r	Abstract pi-style	Yes	Disk	1	2	(worn)		MZDK	☉	?	?	X29	X29	
X30 ^s	Pi-style	Yes	(worn)	1?	1	Yes		(traces)	☉	16.90 g	?	X30	X30	
Group VI														
106	Abstract pi-style	(worn)	(worn)	3	(cut)	No	Two chisel cuts, rev.	AGE?		15.12 g	9:00	106	106	BM 2.4.118
107	Abstract pi-style	(worn)	Hoop	3	3	No	Chisel cut, rev.	AGE		13.72 g	8:00	107	107	BM 2.4.113
Group VII														
108	Pi-style	Yes	Disk	1	3	No	Punch mark rev.	AGE?		15.68 g	8:00	108	108	BM 2.4.139
109	Pi-style	Yes	Disk	1	3	(worn)		AGE?		16.63 g	8:00	109	109	BM 2.4.140

^p Le Rider 1972:5 no. 3.^q Published previously by Mørkholm (1974a:pl. 1.5).^r Le Rider 1972:3 no. 1.^s Diebolt and Nicolet-Pierre 1977:pl. 23.10.^{*} Svoronos 1975:pl. 108.26.

OWLS FROM THE 1973 IRAQ HOARD

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Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
Group VIII														
110	Very abstract pi-style	Yes	Hoop	0	(worn)	(worn)	Owl to l.; chisel cut obv.	AGE?		15.46 g	9:00	110	110	BM 2.4.144
X31 ^t	Very abstract pi-style	Yes	Hoop	0	(worn)	(worn)	Owl to l.?	(traces)		16.10 g	9:00	X31	X31	
Group IX														
111	Uncertain	Yes	Disk	2	2	(cut)	Chisel cut, rev.	AGE		16.62 g	9:00	111	111	BM 2.4.126
112	Uncertain	Yes	Disk	2	2	No	Two chisel cuts, rev.	AGE		16.40 g	9:00	112	112	BM 2.4.127
Group X														
113	Uncertain	Yes?	Hoop?	0	2	Yes	Owl to l.;	AGE		12.85 g	9:00	113	113	BM 2.4.141
114	Uncertain	Yes?	Hoop?	0	2	Yes	Owl to l.; chisel cut, rev.	AGE		14.00 g	9:00	114	114	BM 2.4.142
115	Abstract pi-style	?	Hoop	1?	2	Yes	Owl to l.; punch center obv.	AGE		15.32 g	9:00	115	115	BM 2.4.143
Group XI														
116	Abstract	?	?	?	2	(cut)	Athena to l.; chisel cut, rev.	AGE		15.84 g	9:00	116	116	BM 2.4.146
117 ^u	Abstract	No	?	0	2	Yes	Athena to l.; chisel cut, rev.	AGE		16.97 g	9:00	117	117	ANS 74. 274

^t Le Rider 1972:5 no. 10.

^u This coin, said to be from the 1973 Iraq hoard, was acquired by the ANS in 1974.

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die	Die	Museum Number		
												Links Obverse	Links Reverse			
Group XII																
118	Pi-style	Yes	Hoop	(worn)	2	Yes	Chisel cut, rev.	AGE		16.14 g	9:00	118	118	BM 2.4.64		
119 ^v	Pi-style	Yes	Hoop	1	1	No						16.90 g	9:00	119	119	
Levantine																
120	Pi 3/4	Yes	Disk	1	2	(off-flan)	Inscription, obv. Inscription, obv.; two chisel cuts, obv.; chisel cut, rev.	AGE		16.57 g	9:00	120	120	BM 2.4.130		
121	Abstract pi-style	No	Hoop	2	2	No						16.97 g	9:00	121	121	BM 2.4.131
Miscellaneous Imitations																
122	Pi-4/5	No	Disk	1	n/a	Yes	Chisel cut, rev. Chisel cut, obv.; three chisel cuts, rev. Chisel cut, obv.	AGE		16.64 g	8:00	122	122	BM 2.4.54		
123	Pi-2/3	Yes	Disk	1	(cut)	(cut)						16.84 g	9:00	123	123	BM 2.4.47
124	Pi-2/3	Yes	Hoop	2	2	(cut)						15.62 g	9:00	124	124	BM 2.4.56
125	Pi-style	(worn)	hoop	1	(worn)	(worn)						16.44 g	8:00	125	125	BM 2.4.65
126	(worn)	(worn)	(worn)	2?	(worn)	No?	Punch mark, rev. Two chisel cuts, obv.	AGE		16.32 g	9:00	126	126	BM 2.4.156		
127	Pi-style	Yes	Hoop	1?	2	No						16.34 g	10:00	127	127	BM 2.4.66
128	Pi-style	Yes	(worn)	(worn)	(worn)	(worn)	Chisel cut, rev.	AGE		16.39 g	9:00	128	128	BM 2.4.58		
129	Pi-3/4	Yes	Disk	1?	(worn)	No						15.78 g	9:00	129	129	BM 2.4.26
130	Pi-style	Yes?	Hoop	1	1?	(off-flan)	Chisel cut, rev.	AGE		16.45 g	10:00	130	130	BM 2.4.67		
131	Pi-style	No	Disk	1	1	Yes						17.10 g	8:00	131	131	BM 2.4.52
132	Pi-4/5	Yes	Disk	(off- flan)	2	Yes	Chisel cut, rev.	AGE		16.68 g	8:00	132	132	BM 2.4.68		
133	Pi-style	No	Disk	(worn)	(worn)	(cut)	Two chisel cuts, rev.	AGE		16.90 g	9:00	133	133	BM 2.4.45		
134	Pi-style	No	Disk	1?	1	(off-flan)	Chisel cut, obv.	AGE		15.54 g	9:00	134	134	BM 2.4.22		
135	Pi-style	Yes	Disk	1?	1	Yes						17.15 g	10:00	135	135	BM 2.4.69
136	(worn)	Yes	Disk	1	2	Yes		AGE		16.40 g	9:00	136	136	BM 2.4.38		

^v Previously published by Mørkholm (1974a:pl. 1.5).

OWLS FROM THE 1973 IRAQ HOARD

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Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links		Museum Number
												Obverse	Reverse	
137	Abstract pi-style	Yes	Disk	2	(cut)	(cut)	Two chisel cuts, rev.	AGE		16.00 g	9:00	137	137	BM 2.4.119
138	Pi-style	Yes	Hoop	1	(cut)	Yes	Two chisel cuts, rev.	AGE		16.66 g	9:00	138	138	BM 2.4.55
139	Abstract pi-style	No	?	1?	(cut)	(cut)	Two chisel cuts, rev.	AGE		16.78 g	9:00	139	139	BM 2.4.111
140	Abstract pi-style	Yes	Disk	(worn)	(cut)	(cut)	Two chisel cuts, rev.	AGE		15.50 g	7:00	140	140	BM 2.4.128
141	Abstract pi-style	(cut)	Hoop	2	?	No	Chisel cut, obv.	AGE		17.19 g	12:00	141	141	BM 2.4.112
142	Pi-style	Yes	Disk	(cut)	2	Yes	Chisel cut, obv.; four chisel cuts, rev.	AGE		16.77 g	9:00	142	142	BM 2.4.104
143	Pi-style	No	Hoop	2	2	Yes?	Chisel cut, rev.	AGE		16.73 g	8:00	143	143	BM 2.4.129
144	Pi-style	Yes	Disk	(off- flan)	2	(cut)	Chisel cut, rev.; punch mark, obv.	AGE		14.71 g	9:00	144	144	BM 2.4.105
145	Uncertain	No	Disk	0	2	No	Chisel cut, rev.	AGE?		16.80 g	8:00	145	145	BM 2.4.124
146	Pi-style	?	?	1	(cut)	(cut)	Chisel cut, obv.; chisel cut, rev.	(worn)		16.52 g	9:00	146	146	BM 2.4.87
147	Pi-style	Yes	Disk	3	2	Yes	Chisel cut, rev.	AGE		15.32 g	6:00	147	147	BM 2.4.117
148	Pi-style	Yes	Disk	1	2	Yes		AGE		16.71 g	9:00	148	148	BM 2.4.148
149	(off-flan)	No	Disk	1	2?	No?	Chisel cut, rev.	AGE		16.61 g	9:00	149	149	BM 2.4.149
150	Abstract	No	Disk	1	2	Yes		AGE		16.76 g	10:00	150	150	BM 2.4.150
151	Pi-style	No	Disk	1	1	Yes	Chisel cut, obv.	AGE		16.86 g	9:00	151	151	BM 2.4.151
152	Abstract pi-style	(worn)	(worn)	(worn)	(worn)	No	Owl to l.	AGE		16.67 g	8:30	152	152	BM 2.4.145
153	Abstract	(worn)	(worn)	(worn)	(cut)	(cut)	Five chisel cuts, rev.	AGE		16.00 g	9:00	153	153	BM 2.4.152
154	Abstract pi-style	No	Disk	(worn)	(cut)	(cut)	Two chisel cuts, rev.	AGE		15.37 g	10:00	154	154	BM 2.4.135
155	Uncertain	Yes	Hoop	3	(cut)	(off-flan)	Two chisel cuts, rev.	AGE		15.60 g	10:00	155	155	BM 2.4.106
156	(worn)	(worn)	Disk?	(worn)	(worn)	No?	(off-flan)	(off-flan)		15.08 g	10:00	156	156	BM 2.4.153
157	(worn)	(worn)	Disk?	2?	(worn)	(worn)		AGE?		15.54 g	10:00	157	157	BM 2.4.154
158	(off-flan)	(off-flan)	(off-flan)	(off- flan)	(cut)	(cut)	Two chisel cuts, rev.	AGE		15.39 g	9:00	158	158	BM 2.4.41

Num- ber	Helmet Ornament	Point Tragus	Earring Type	Strands	Dots- Beak	Dot- Forehead	Comments	Legend	Symbol	Weight	Die Axis	Die Links Obverse	Die Links Reverse	Museum Number
159	Abstract pi-style	(worn)	disk?	0?	(worn)	(cut)	Two chisel cuts, rev.	AGE		15.15 g	9:00	159	159	BM 2.4.155
160	(worn)	(worn)	(worn)	(worn)	(worn)	(worn)		AGE		14.99 g	9:00	160	160	BM 2.4.157
161	Abstract pi-style	Yes	Disk	1	(cut)	(off-flan)	Chisel cut, obv.; two chisel cuts, rev.	AGE		18.29 g	9:00	161	161	BM 2.4.123
Drachms														
162	Abstract pi-style	No	Hoop	1	(cut)	(cut)	Chisel cut, rev.	AGE		4.16 g	9:00	162	162	BM 2.4.158
163	Abstract pi-style	No	Hoop	?	(cut)	(cut)	Chisel cut through coin	AGE?		4.12 g	9:00	163	163	BM 2.4.159

A HOARD OF UNPUBLISHED BRONZE COINS OF PTOLEMY CERAUNUS

(Plates 9–11)

MELİH ARSLAN* AND AYÇA ÖZEN

This hoard, found in Turkish Thrace in 1997, was bought on the antiquities market of Istanbul by the Ankara coin collector Ahmet Erhan Erdener. Currently the 61 coins published in this article are registered as in the possession of Mr. Erdener. It is likely that the hoard originally contained more specimens, for Mr. Erdener informed us that he declined to buy several worn specimens that seemed to have belonged to the hoard.

The specimens of this hoard vary between 10 mm and 14 mm in diameter, and they weigh between 0.67 g and 3.69 g. All the coins carry on the reverse a variation of a legend that abbreviates the regal name **ΒΑΣΙΛΕΩΣ ΠΤΟΛΕΜΑΙΟΥ**. These hitherto unknown bronze coins can be divided into three distinct groups.

Group I. On the obverse is the head of Poseidon wearing taenia and laurel wreath, on the reverse a trident and legend **ΠΤΟΛΕΜ**. There are two coins in this group (nos. 1–2).

Group II. On the obverse is the head of Apollo wearing laurel wreath, on the reverse a cornucopiae (Schönert-Geiss 1970–72 Byzantium obverse types 2023–2024 and reverse types 2025–2029) with the legend **ΒΑΣ ΠΤΟ**. Two coins (nos. 3–4) belong to this group.

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Group III. On the obverse is the veiled head of Arsinoe II, wearing diadem, right, or veiled head of Demeter right, wreathed with corn, on the reverse is an eagle, standing left with wings closed and the legend **ΒΑΣΙΛ ΠΤΟ**, although many specimens carry an abbreviated form of this legend. On some specimens, the eagle stands on a thunderbolt (nos. 5–16), and on others the thunderbolt is absent (nos. 17–61). A total of 57 specimens (nos. 5–61), the vast majority of the hoard, belong to this group.

In our opinion, the king named on these coins can be none other than Ptolemy Ceraunus, the oldest son of Ptolemy I Soter (305–283 BC), who briefly ruled Macedon and Thrace in 281–279 BC. Ptolemy Ceraunus fell fighting the Celtic invaders who later crossed into Asia Minor. In 280 BC, Ptolemy married his half-sister Arsinoe II, depicted on coins of group III, to secure his legitimacy, but Ptolemy soon afterwards murdered Arsinoe's children by Lysimachus and so alienated his sibling queen. If correctly identified, the coins of group III were minted in a brief period, perhaps less than an year, in 280–279 BC.

In regard to dies (Table 1), the two specimens in Group I share no dies; the two specimens in Group II are die duplicates. The specimens of Group III were manufactured from five obverse dies in combination with eight reverse dies, and there are no shared reverse dies among the obverse dies. The style and obverse types of these bronze coins resemble bronze coins of Bisanthe and Byzantium (Schönert-Geiss 1970–72 Byzantium 2025–2031, 1975 Bisanthe 38–42).

TABLE 1. Die Links

Group I	Obverse die 1 (no. 1)	Reverse die 1 (no. 1)
	Obverse die 2 (no. 2)	Reverse die 2 (no. 2)
Group II	Obverse die 3 (nos. 3–4)	Reverse die 3 (nos. 3–4)
Group III	Obverse die 4 (nos. 2–12)	Reverse die 4 (nos. 5–7)
		Reverse die 5 (nos. 8–12)
	Obverse die 5 (nos. 13–16)	Reverse die 6 (nos. 13–16)
	Obverse die 6 (nos. 17–55)	Reverse die 7 (nos. 17–27)
		Reverse die 8 (no. 28)
		Reverse die 9 (nos. 29–55)
		Reverse die 10 (nos. 56–60)
	Obverse die 7 (no. 61)	Reverse die 11 (no. 61)

Unlike the coins of Group I, the obverse and reverse dies in Group II and III recall the design of Ptolemaic coins in Egypt, notably the types of a veiled portrait of Arsinoe II, the cornucopiae, and the eagle standing on the thunderbolt (Mørkholm 1991:294–296). If these coins are correctly attributed to Ptolemy Ceraunus, this scion of the Ptolemaic house might have emphasized his dynastic credentials by imitating the coinage of Egypt.

Literary and epigraphic sources offer no clue as to the place of origin of these coins, which are presumed to have been struck in Thrace given the limited area of circulation of most fractional coins. The obverse portrait of Poseidon and trident reverse on the coins of Group I point to Byzantium as the mint. Byzantium minted silver obols bearing a trident reverse (cf. *SNG Cop* 484–485) and, in general, the style and types of these bronze coins resemble larger bronze coins of Bisanthe and Byzantium (*SNG Cop* 464, 490–491). Furthermore, all coins in this hoard have the hollow reverse characteristic of these obols.

A hitherto unexplained bronze coin that has been attributed to an otherwise unattested Thracian dynast Ptolemaeus (*BMC Thrace* 204, no. 1) may be explained by the coins of this new hoard. The obverse type and dimensions of this Thracian coin in the British Museum indicate that it may be of Hellenistic date. The genitive is that of an ethnic ΠΤΟΛΕΜΑΙΕΩ[Ν] (with the *nu* almost certainly struck off-flan) rather than of an individual. This coin may belong to yet another issue of fractional bronze coins by Ptolemy Ceraunus, for the ethnic could well represent the city of Lysimachia that might have been briefly rechristened Ptolemaeis.

ACKNOWLEDGMENTS

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Note: During our Turkey-Thrace catalogue studies in Kırklareli Museum in 2000, a continuation of this hoard was found (Group III, 50 bronze coins).

CATALOGUE

Group I

1. Obv. Head of Poseidon r. wearing taenia
Rev. ΠΤ[ΟΛΕ]Μ, trident
OD 1/RD 1, Inv. 46, 1.45 g, 12 mm, 12h
2. Obv. Similar
Rev. [ΠΤΟ]Λ[ΕΜ], similar
OD 2/RD 2, Inv. 47, 1.05 g 11 mm, 6h

Group II

3. Obv. Head of Apollo laureate r.
Rev. ΒΑΣ ΠΤΟ, filleted cornucopiae
OD 3/RD 3, Inv. 48, 1.43 g, 11 mm, 12h
4. Obv. same die
Rev. same die
OD 3/RD 3, Inv. 49, 0.67 g, 11 mm, 12h

Group III

5. Obv. Diademed, veiled bust of Arsinoe II r. or veiled head of Demeter r.
Rev. ΒΑΣΙ ΠΤΟΛΕ, eagle stdg. l. on thunderbolt
OD 4/RD 4, Inv. 50, 2.58 g, 14 mm, 9h
6. Same dies
OD 4/RD 4, Inv. 61, 12.5 mm., 9h
7. Same dies
OD 4/RD 4, Inv. 62, 3.08 g, 13 mm, 9h
8. Obv. Same die.
Rev. ΒΑΣΙ ΠΤΟ, similar
OD 4/RD 5, Inv. 53, 3.69 g, 13 mm, 6h
9. Obv. Same die.
OD 4/RD 5, Inv. 54, 1.95 g, 12.5 mm, 6h
10. Same dies
OD 4/RD 5, Inv. 64, 2.64 g, 12.2 mm, 6h
11. Same dies
OD 4/RD 5, Inv. 86, 2.32 g, 11.5 mm, 6h

12. Same dies
OD 4/RD 5, Inv. 86, 2.32 g, 11.5 mm, 6h
13. Obv. Similar
Rev. **ΒΑΣΙ ΠΤΟ**, similar.
OD 5/RD 6, Inv. 60, 2.00 g, 13 mm, 12h
14. Same dies
OD 5/RD 6, Inv. 105, 1.73 g, 13.5 mm, 12h
15. Same dies
OD 5/RD 6, Inv. 55, 1.80 g, 13 mm, 12h
16. Same dies
OD 5/RD 6, Inv. 56, 3.32 g, 13.5 mm, 1h
17. Similar.
Similar.
OD 6/RD 7, Inv. 67, 2.60 g, 12.5 mm, 3h
18. Same dies
OD 6/RD 7, Inv. 51, 1.90 g, 13.5 mm, 9h
19. Same dies
OD 6/RD 7, Inv. 68, 2.23 g, 14 mm, 3 h
20. Same dies
OD 6/RD 7, Inv. 69, 2.44 g, 11 mm, 5h
21. Same dies.
OD 6/RD 7, Inv 70, 1.58 g, 12 mm, 11h
22. Same dies.
OD 6/RD 7, Inv. 71, 2.20 g, 13.5 mm, 5h
23. Same dies.
OD 6/RD 7, Inv. 73, 2.22 g, 11.5 mm, 3h
24. Same dies
OD 6/RD 7, Inv. 74, 1.89 g, 12 mm, 3h
25. Same dies.
OD 6/RD 7, Inv. 77, 2.43 g, 12.5 mm, 5h
26. Same dies.
OD 6/RD 7, Inv. 95, 1.75 g, 11.5 mm, 5h
27. Same dies.
OD 6/RD 7, Inv. 63, 2.08 g, 12.5 mm, 3h
28. Obv. Same die.
Rev. **ΒΑΣΙ [ΠΤΟ]**, similar.
OD 6/RD 8, Inv. 63, 2.36 g, 13.5 mm, 3h

29. Obv. Same die.
Rev. **ΒΑΣΙΛ ΠΤΟ**, similar
OD 6/RD 9, Inv. 52, 1.70 g, 13 mm, 12h
30. Same dies.
OD 6/RD 9, Inv. 65, 2.40 g, 11.5 mm, 12h
31. Same dies.
OD 6/RD 9, Inv. 66, 1.74 g, 12 mm, 12h
32. Same dies.
OD 6/RD 9, Inv. 72, 2.2 g, 11.5 mm., 6h
33. Same dies.
OD 6/RD 9, Inv. 75, 1.99 g, 11 mm, 12h
34. Same dies.
OD 6/RD 9, Inv. 76, 1.40 g, 11.5 mm, 12h
35. Same dies.
OD 6/RD 9, Inv. 78, 1.27 g, 11 mm, 12h
36. Same dies.
OD 6/RD 9, Inv. 79, 1.50 g, 12 mm, 12h
37. Same dies.
OD 6/RD 9, Inv. 80, 2.07 g, 12 mm, 12h
38. Same dies
OD 6/RD 9, Inv. 81, 2.09 g, 12 mm, 12h
39. Same dies.
OD 6/RD 9, Inv. 82, 1.86 g, 11.7 mm, 12h
40. Same dies.
OD 6/RD 9, Inv. 83, 1.41 g, 10.5 mm, 6h
41. Same dies.
OD 6/RD 9, Inv. 84, 1.08 g, 11 mm, 12h
42. Same dies.
OD 6/RD 9, Inv. 85, 1.51 g, 11 mm, 12h
43. Same dies.
OD 6/RD 9, Inv. 87, 1.18 g, 11 mm, 12h
44. Same dies.
OD 6/RD 9, Inv. 88, 1.83 g, 11.8 mm., 12h
45. Same dies.
OD 6/RD 9, Inv. 89, 1.79 g, 12 mm, 12h
46. Same dies.
OD 6/RD 9, Inv. 90, 1.40 g, 11.2 mm, 6h

47. Same dies.
OD 6/RD 9, Inv. 91, 2.26 g, 11.5 mm, 6h
48. Same dies.
OD 6/RD 9, Inv. 92, 1.69 g, 11 mm, 12h
49. Same dies.
OD 6/RD 9, Inv. 93, 1.42 g, 11.5 mm, 12h
50. Same dies.
OD 6/RD 9, Inv. 94, 1.05 g, 12 mm, 12h
51. Same dies.
OD 6/RD 9, Inv. 96, 1.97 g, 12 mm, 6h
52. Same dies.
OD 6/RD 9, Inv. 97, 1.29 g, 12 mm, 12h
53. Same dies.
OD 6/RD 9, Inv. 98, 1.07 g, 12.5 mm, 12h
54. Same dies.
OD 6/RD 9, Inv. 101, 1.94 g, 12 mm, 12h
55. Same dies.
OD 6/RD 9, 2.52 g, 12 mm 12h
56. Obv. Similar.
Rev. **ΒΑΣΙ ΠΤΟ**, similar.
OD 7/RD 10, Inv. 67, 2.78 g, 13.5 mm., 6h
57. Same dies.
OD 7/RD 10, Inv. 99, 1.84 g, 10.5 mm., 12h
58. Same dies
OD 7/RD 10, Inv. 100, 1.85 g, 12 mm, 12h
59. Same dies.
OD 7/RD 10, Inv. 101, 2.18 g, 12 mm, 3h
60. Same dies.
OD 7/RD 10, Inv. 102, 1.67 g, 13 mm, 2h
61. Obv. Similar.
Rev. **ΒΑΣΙΑ ΠΤΟ**, similar.
OD 8/RD 11, 1.85 g, 13.5 mm, 12h

ABBREVIATIONS

BMC Thrace = Head and Gardner 1877

SNG Cop = Nationalmuseet 1942

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LARGE PTOLEMAIC BRONZES IN THIRD-CENTURY EGYPTIAN HOARDS

(PLATES 12–17)

CATHARINE C. LORBER*

In recent years two major finds have enlarged our already significant inventory of Egyptian hoards containing large third-century Ptolemaic bronzes. Both of the new hoards were unearthed in the course of archaeological excavations in Egypt, and thus their integrity is assured. A pot hoard of 456 Ptolemaic bronzes, hidden beneath the foundations of the settlement wall of Area 5 at Saqqâra, was published in 1988 by Martin Price (Price 1988:66–70). Following Price, we shall refer to this important find as the Anubieion hoard. A hoard of 679 Ptolemaic bronzes, discovered in the stairwell of Ptolemaic House D at Elephantine, was published in 1993 by Hans-Christoph Noeske (Noeske 1993:206–208). These new finds, considered together with eight hoards published previously, offer fresh evidence for the chronology of Ptolemaic bronze currency in the third century, and for the denominations of that currency.

Of the eight earlier hoards, two passed through commercial channels before being analyzed by numismatic scholars: a hoard reportedly from Lower Egypt (*IGCH* 1691), published by Edward T. Newell, and a hoard in the J. Paul Getty Museum, published by Paolo Visonà (Newell 1935:51–67; Visonà 1978–79:153–162). The remaining six hoards received more summary treatment. J. G. Milne briefly recorded

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three hoards of uncertain Egyptian provenance stored in the Cairo Museum (*IGCH* 1696–98) (Milne 1908:32). Three additional hoards came to light through controlled excavations: a hoard found in the walls of the temple of Ramesses at Thebes (*IGCH* 1699) (Quibell 1896:13; Newell 1935:64–67), a pot hoard from Birabi near Luxor (*IGCH* 1700),¹ and a funerary offering placed beneath the floor of the vestibule of a brick-vaulted tomb at Birabi (Carnarvon and Carter 1912:43–45).² The last find was described by its excavators as “new coinage”—that is, coinage unusually fresh for Upper Egypt (Carnarvon and Carter 1912:46). Its interment can be placed, at least approximately, by two demotic papyri found in a nearby tomb, both dated to year 4 of Harmachis, that is, 202/1 BC.³

These ten hoards comprise a solid body of evidence, more than usually reliable because of the known provenance and archaeological pedigree of five of the ten. It is notable that four of the provenances are Upper Egyptian and the other Middle Egyptian. Thus these hoards reflect conditions in the south, and the conclusions drawn from them may not necessarily be applicable to Lower Egypt. In this respect these hoards resemble the papyrological evidence, which also originates outside the Delta.

In the absence of an established terminology for Ptolemaic bronzes, the hoards under consideration here were classified using several different approaches. Newell referred to heavy and light units and halves (Newell 1935:65). Price identified four denominations which he labelled with Roman numerals I–IV (Price 1988:66).⁴ Other authors provided weights and diameters, or simply cited catalogue numbers from Svoronos or *SNG Copenhagen* (Svoronos 1904–08; Kromann and Mørholm 1977). In order to compare all the hoard contents, we shall make use of the following abbreviations to indicate coins of similar

¹ Unfortunately dispersed from the Metropolitan Museum of Art, leaving only a partial record in the photo files of the American Numismatic Society.

² R.A. Hazzard kindly drew my attention to this little-known hoard.

³ Pestman (1967:44) dated Harmachis' first regnal year to 205/4.

⁴ In addition, Price performed a metrological study on the Anubieion, Newell, and Getty hoard coins (1988:69). The small table (1988:68) contrasting the weights of these denominations under Ptolemies II and III is inconsistent with Price's histograms (1988:69) and should be overlooked.

diameter and weight, that is, coins presumably of the same denomination. The weights are idealized to facilitate recognition of the metrological relationships.

module A	c. 45 mm, c. 96 g
module B	c. 40–43 mm, c. 72 g
module C	c. 38 mm, c. 48 g
module D	c. 35–36 mm, c. 36 g
module F	c. 30 mm, c. 24 g
module G	c. 27–28 mm, c. 18 g
module I	c. 24 mm, c. 12 g

RELATIVE CHRONOLOGY

The Anubieion hoard had an earlier closure than the comparable hoards known at the time of its publication. Price used the comparison to demonstrate that three bronze series represented in the Anubieion hoard—one unmarked (Svor. 1002ff.), one marked with the letter **E** and its variants **Ε** and **Ϝ** (Svor. 974ff.), and one marked with the letter **Λ** (Svor. 1166ff.)—had to precede the familiar series of Ptolemy III marked with the monogram **✱** (Svor. 964ff.). By analogy with the precious metal coins, he proposed the following sequence of controls: unmarked, **E** and variants, **Λ** (no precious metal equivalent), and **✱** for Ptolemy III; and **ΣE** (with variants **Ξ** and **Σ**) followed by **ΔI** (and **ΛI**) for Ptolemy IV (Price 1988:68, 70).

The Elephantine hoard, in contrast to the others cited here, consisted predominantly of bronzes of Ptolemy II belonging to the expanded denominational system introduced after c. 261 BC.⁵ It had an earlier closure than even the Anubieion hoard (see Table 1). The only coins in the Elephantine hoard later than Ptolemy II were marked with the control letter **Λ** between the legs of the eagle on the

⁵ For a conspectus of this coinage, see Mørkholm (1991:105); see also Hazzard (1995:64).

TABLE 1.

Control	Module	Elephantine No. of specs.	Anubieion Cat. no(s).	Newell Cat. no(s). ^a	Getty Cat. no(s). ^b
Ptolemy II, reformed coinage					
Unmarked	B, c. 72 g (Sv. 413)	5			
	F, c. 24 g (Sv. 415)	4			
A	B, c. 72 g (Sv. 422)	28			
	F, c. 24 g (Sv. 423)	6			
Δ	B, c. 72 g (Sv. 437)	88	"early group" 1-7		
	F, c. 24 g (Sv. 438)	29			
	I, c. 12 g (Sv. 439)	8			
E	B, c. 72 g (Sv. 447)	8			
	F, c. 24 g (Sv. 449)	13	13-15		
	F, c. 24 g (Sv. 449 var.)	2 (Ξ)	16 (Ξ)		
	I, c. 12 g (Sv. 450)	2			
Z	F, c. 24 g (Sv. 458)	2			
Θ	A, c. 96 g (Sv. 462)			2 (VW)	
	B, c. 72 g (Sv. 463)	83			
	F, c. 24 g (Sv. 465)	14	8-12		
	I, c. 12 g (Sv. 467)	5			
Θ — ME	B, c. 72 g (Sv. 464)	19			
	F, c. 24 g (Sv. 466)	4			
Λ	B, c. 72 g (Sv. 479)	116			3 (W)
	F, c. 24 g (Sv. 481)	5			
	I, c. 12 g (Sv. 482)	3			
O	B, c. 72 g (Sv.—)	26			
	F, c. 24 g (Sv.—)	5			
P	B, c. 72 g (Sv. 497)	95			4-5 (W, G)
	F, c. 24 g (Sv. 498)	2			
Υ	F, c. 24 g	3			
Y	B, c. 72 g	28			
X	B, c. 72 g (Sv. 514)	35			
Ptolemy III					
Λ	A, c. 96 g (Sv. 478)		355-356	29 (VG)	

^a Newell's indications of condition are abbreviated as follows: VW = "very worn"; W = "worn"; G = "good"; VG = "very good;" F = "fine."

^b Parenthetical entries represent the author's count of each variety and estimate of average wear, which vary slightly in some cases from those of Visonà.

	C, c. 48 g (Sv. 1166)	357-386		130-132 (4, worn) 133 (—)
	D, c. 36 g (Sv. 1167)	26 388-409		
	G, c. 18 g (Sv. 1169)	13 410-438		
E	A, c. 96 g (Sv. 446)	19-34	8-20 (7W, 5G, 1VG)	4-11 (8, some wear)
	C, c. 48 g (Sv. 974)	35-185	21-24 (2W, 2G)	106-123 (15, some wear, tending to worn)
	D, c. 36 g (Sv. 944a)	186		
	G, c. 18 g (Sv. 975)	187-217		134 (1, some wear)
E	A, c. 96 g	218-219		
E	C, c. 48 g	220-313	25-28 (1G, 3VG)	124-129 (10, some wear, tending to slight)
E	C, c. 48 g	314-323		
	G, c. 18 g	324-325		
Unmarked	A, c. 96 g (Sv. 412)		1 (G)	1-3 (3, some wear)
	B, c. 72 g (Sv. 1002)			35 (1, slight wear)
	C, c. 48 g (Sv. 1172)			104-105 (1, sl.-some wear)
	G, c. 18 g (Sv.—)	18		
*	B, c. 72 g (Sv. 964)		30-37 (1W, 1G, 2VG, 4F)	12-28 (17, slight wear to fresh)
	D, c. 36 g (Sv. 965)		38-39 (1VG, 1F)	29-33 (5, slight wear)
	F, c. 24 g (Sv. 966)			34 (1, some wear)
Ptolemy IV				
	B, c. 72 g (Sv. 1126)		40-41 (1VG, 1F)	55-63 (9, some wear)
AI	D, c. 36 g (Sv. 1128)		42-43 (1G, 1F)	64-66 (3, worn)
AI	B, c. 72 g (Sv. 1125)		44-57 (1W, 7G, 6F)	36-50 (18, some wear)
	D, c. 36 g (Sv. 1127)			51-53 (4, slight wear)
Σ	B, c. 72 g (Sv. 992)		66-69 (2G, 1VG, 1F)	89-100 (10, slight to some wear)
	D, c. 36 g			101 (1, slight to some wear)
Σ	B, c. 72 g (Sv. 992)		58-60 (F)	67-76 (9, slight to some wear)
	D, c. 36 g (Sv. 993)			77-81 (4, slight wear)
ΣE	B, c. 72 g (Sv. 992)		61-65 (1G, 2VG, 2F)	82-87 (6, slight wear)
	C, c. 48 g (Sv. 1148-49)			102-103 (2, slight wear)
	D, c. 36 g (Sv. 993)			88 (1, slight wear)

reverse.⁶ This suggests that Price placed the Λ series too late in his sequence of controls for Ptolemy III. The present author found confirmation in her reexamination of the Getty hoard, deeming the coins of the Λ series to be more worn, overall, than any other component of the hoard. The series marked Ξ and E (with variants) showed somewhat less wear, and the unmarked series appeared to be yet more recent.⁷

The \star series is confidently attributed by all authorities to Ptolemy III, because its control is shared by Attic-weight pentadrachms of Berenice II in gold and silver (Svor. 962–963). This series is decidedly the freshest component of the Getty hoard, a fact that on its surface would seem to suggest that the \star series was that last issued before deposit of the hoard. Yet the Getty hoard contains coins from series generally attributed to the fourth Ptolemy. Visonà attempted to account for the discrepancy by characterizing the later coins as a circulation component within a savings hoard (Visonà 1978–79:156–157). The Newell hoard seems to present a similar anomaly. Newell assigned comparable grades to the \star series and to later components attributed to Ptolemy IV. But a glance at Newell's plates reveals more wear on the coins of Ptolemy IV than on the \star coins (Newell 1935:pl. ix, 41, 42, 49, 63, and pl. viii, 30, 39), all described as "fine." Price wrote of the dramatic improvement in the style and alloy of the \star bronze series, which he characterized as a reform (Price 1988:68). A superior alloy might indeed help to account for the rather brilliant condition of this group in the Getty and Newell hoards.

⁶ Noeske (1993:207) gave this series to Ptolemy IV, with the result that most of the Elephantine hoard coins were attributed to Ptolemy II, and a small remainder to Ptolemy IV. As possible explanations for the remarkable absence of coins of Ptolemy III, not only from the hoard but also from the individual coin finds, he suggested (1993:208) that the coins of Ptolemy III were perhaps rather scantily produced; that they may not have had time to travel from Alexandria to Upper Egypt; or that there may have been political reasons at Elephantine for excluding them. When the contents of the Anubieion hoard are taken into account, reattribution seems the most satisfactory solution to the lacuna.

⁷ The author's grading yielded slightly different results from that of Visonà, who employed a numerical system from 1 to 6, with 1 representing least wear and 6 representing most wear. According to Visonà's system, the various bronze series display the following degrees of wear: Ξ series, av. 4; Λ series, av. 3.5; E series, av. 3.2; and unmarked series, av. 3.

Price's relative chronology for the bronze issues of Ptolemy IV is also open to question. Assuming that Philopator employed a consistent alloy for his bronze coinage, the relative wear of different series in the Getty hoard suggests the following sequence: Λ I, Δ I, Σ , Ξ , Σ E. Newell had already rejected the notion that the controls of the bronze coinage ran strictly parallel to those of the precious metal coinage, insisting that the style of the bronze coins must preclude placing Σ E before Δ I (Newell 1935:63–64). Visonà recorded three die links among twelve coins of the Λ I series, and two links among fifteen coins of the Ξ series (Visonà 1978–79:156). These links confirm that these series are among the latest represented in the Getty hoard, but are probably inconclusive with respect to the relative chronology of the two controls.

The hoard evidence is not perfectly consistent, but on a whole seems to support a revision of Price's sequence of emissions as follows: Λ , E, Ξ and variants, unmarked, \star , Λ I, Δ I, Σ , Ξ , Σ E.

THE BRONZE DRACHM

This group of hoards raises questions about the largest bronze coin ever struck by the Ptolemies, our module A, with a weight of about 96 grams. The obverse type is a head of Zeus Ammon right, and the reverse type eagle with spread wings standing left on thunderbolt, head reverted. The elements of the legend are transposed from their usual positions, with the kingly title on the left and the royal name on the right. Only a handful of emissions of module A have been recorded: unmarked (Svor. 412); issues marked with the control letter E (Svor. 446) and its variants Ξ (*Anubieion* 218–219), Ξ (Mit Rahineh hoard, *IGCH* 1714, photo in ANS photo file), and (observed by the author in the Getty hoard); and issues marked Θ (Svor. 462), Λ (Svor. 478), and Σ (Svor. [addenda] 502a). The last, in fact, must be considered questionable. The only example recorded thus far (*Hunter* III, p. 364, 17) has a quite worn control letter. Macdonald's reading of Σ can be accepted only provisionally, pending publication of a better preserved specimen.⁸

⁸ Possibly the original form of the control was E or Γ . However J.D. Bateson was

Svoronos attributed all then-known varieties of module A to the reign of Ptolemy II. However no example of this module was included in the Elephantine hoard, the only one of our ten hoards formed largely under Philadelphus. Close study of the Lower Egypt hoard prompted Newell to reassign examples of module A marked **Λ** and **Ε** to Ptolemy III. He observed that they were of "distinctly better" average condition than the hoard coins listed under Ptolemy II, which he described as "very much worn indeed." Newell noted that the same argument could apply to the unmarked specimen of module A in the hoard, but that stylistic considerations had caused him to leave it among the issues of the second Ptolemy, whereas affinities of style and execution drew the **Λ** and **Ε** issues into relation with other bronzes of Ptolemy III (Newell 1935:58–59). Also included in the hoard was a single specimen of module A marked with **Θ**, the only example of its denomination that displayed heavy wear consistent with an attribution to Ptolemy II.

The Anubieion hoard too displayed a clear divide between an early group, showing consistent wear, and a larger group of fresh coins that had apparently circulated only briefly (Price 1988:67). Module A was not represented in the early group, but specimens marked with **Λ**, **Ε**, and **Ξ** were included in the second group.⁹ Further evidence comes from the Getty hoard, whose specimens of module A (unmarked and **Ε** series) were the only coins attributed to Ptolemy II by Visonà. They do not in fact stand out as more worn than the rest of the hoard contents. This hoard was actively marketed before coming to rest at the Getty, so we cannot be certain of its original contents; but if specimens of module A were sold off, they were likely the freshest examples of the denomination. The Getty hoard as now constituted reflects hoard formation beginning only under Ptolemy III. This is consistent with the makeup of the remaining third-century bronze hoards summarized in Table 2.

kind enough to examine the coin and pronounces himself inclined to agree with Macdonald's reading **Σ** (note of 9 June 1997).

⁹ Price (1988:68) hypothesized a reform of the bronze coinage under Ptolemy III, in which the weight of the heaviest denomination was increased from c. 96 g to c. 105 g. This supposed weight increase is not confirmed by Price's own metrological data collected on p. 69 and should be rejected.

TABLE 2.

Coin emissions	Luxor ^a (Birabi) <i>IGCH</i> 1700	Ramesseum (Thebes, near Luxor) <i>IGCH</i> 1699	<i>IGCH</i> 1697 ^b	<i>IGCH</i> 1696 ^b	<i>IGCH</i> 1698 ^b	Carnarvon ^c (Birabi)
Ptolemy III						
Λ						
C, c. 48 g (Sv. 1166)	✓	1 ^d	✓	✓	✓	✓
D, c. 36 g (Sv. 1167)	✓					
G, c. 18 g (Sv. 1169)	✓					
E						
A, c. 96 g (Sv. 446)		2				
C, c. 48 g (Sv. 974)	✓	13	✓	✓	✓	✓
ⲉ						
C, c. 48 g (Sv. 974v)						✓
Unmarked						
A, c. 96 g (Sv. 412)	3+	2	1 ^e			
✱						
B, c. 72 g (Sv. 964)	✓	8	5	10	24	✓
D, c. 36 g (Sv. 965)	✓	5	9	8	21	✓

^a The Luxor hoard was a pot hoard from excavations, comprising 157 coins; it found its way to the Metropolitan Museum and was subsequently dispersed. The contents reported here are based on photos of fifteen coins on file with the ANS, but precise numbers obviously cannot be specified.

^b From Milne (1908:32). Milne's brief synopsis lumped together specimens of module C with the controls Λ and E. The totals were *IGCH* 1697, 13; *IGCH* 1696, 13; *IGCH* 1698, 40.

^c Carnarvon and Carter (1912) recorded the hoard coins by denomination, listing control varieties without specifying the breakdown. They reported 16 specimens of module A, which they subdivided into two groups, one with an average weight of 73 g and an average diameter of 42 mm, the other with an average weight of 67 g and an average diameter of 40.5 mm. Module C was represented by 17 specimens, of which the one illustrated in fig. 13 (with control E) was visibly more worn than the other three denominations illustrated, all of which bore the control ✱. Specimens of module D totalled 14.

^d This control was recorded as A by Quibell (1896). The Λ reading was suggested by Newell (1935:65).

^e Apparently the controls on this coin were illegible. Milne (1908:32) listed three possible references, Svor. 412, 446, or 462, corresponding to the unmarked, E, and Θ emissions.

Coin emissions	Luxor (Birabi) <i>IGCH</i> 1700	Ramesseum (Thebes, near Luxor) <i>IGCH</i> 1699	<i>IGCH</i> 1697	<i>IGCH</i> 1696	<i>IGCH</i> 1698	Carnarvon (Birabi)
Ptolemy IV						
Δ ^f						
B, c. 72 g (Sv. 1125)		8	5	6	14	✓
D, c. 36 g (Sv. 1127)		5	6	6	9	✓
Σ ^g						
B, c. 72 g (Sv. 992v)						✓
D, c. 36 g (Sv. 993v)						✓
ΣE						
B, c. 72 g (Sv. 992)	✓	11	5	6	7	✓
D, c. 36 g (Sv. 993)	✓	13	5	8	6	

^f Milne (1908:32) lumped together the Δ I and Δ II emissions, Svor. 1125–28.

^g Not distinguished from ΣE by Svoronos and by most of the early hoard reports. The exception is Carter's description of the Carnarvon hoard.

The controls Θ and Σ were employed only under Ptolemy II, while the hoard evidence suggests that all the other varieties of module A were issued under Ptolemy III. This is a reattribution of some consequence, because module A was identified by J. G. Milne as the bronze drachm, and some subsequent scholarship has reiterated this opinion (Milne 1938:204; Thompson 1951:366; Hazzard 1995:65). Since only a few issues were struck, the corollary has been that the weight standard was subsequently reduced, so that module B became the new bronze drachm (Hazzard 1995:65; Weiser 1995:42, 48–52 [placing the reduction in 256 BC], cf. p. 30, 19–21; Maresch 1996:52–55). This reconstruction becomes fairly implausible if the bronze drachm, a key denomination of the Ptolemaic currency system, was struck for only two of the numerous series issued under Ptolemy II.¹⁰ Worse, of these

¹⁰ One series was unmarked (Svor. 413–418). The others employed the controls Δ (Svor. 422–427), Σ (Svor. 431–431a), Δ (Svor. 437–442), E (Svor. 447–453), I (Svor. 457–458), Θ (Svor. 462, 463, 465, 467–470), $\Theta-PE$ (Svor. 464, 466), I (Svor. 472–474), Λ (Svor. 479–485), Ξ (Svor. 491, *Köln* 31), O (Elephantine hoard, Curium

TABLE 3. Bronze denominations of Ptolemy II and Ptolemy III by series

Λ	E	Ξ , etc.	Unmarked	\star	ΔI	ΔI	Σ	Ξ	ΣE
A	A	A	A						
			B (scarce)	B	B	B	B	B	B
C	C	C	C					C	C
D	D		D	D	D	D	D	D	D
F			F	F			F	F	F
G	G	G	G						
I	I	I	I	I					
				K					
L	L	L	L	L					
				M					
				N					

Note: In addition to the modules defined in the text, this table lists smaller denominations which do not occur in the hoards: module K, c. 20–21 mm, c. 6 g; module L, c. 17–20 mm, c. 4–4.5 g; module M, c. 16 mm, c. 3 g; and module N, c. 13 mm, c. 1.5 g.

two emissions, only one was substantial; as noted above, module A marked with the control letter Σ has thus far been recorded in only a single, doubtful example.

The author has urged elsewhere that module B, produced abundantly under Ptolemy II, must have been the bronze drachm, and that module A must have represented a bronze octobol (Lorber 1995–96). But the sequence of emissions derived from the hoard evidence presents problems for this interpretation as well (see Table 3). Module B was not minted for the series marked with Λ , E, or Ξ (and variants). Examples of module B from the unmarked series are very rare. The single specimen in the Getty hoard seems closer in style, fabric, and condition to the \star series than to the other unmarked coins in the hoard (Visonà 1978–79:156); conceivably it represents a later cycle in the minting of the unmarked series. Beginning with the

excavations), P (Svor. 497–501), Σ (Svor. 502a, S. Huston coll. [modules F and I]), T (Svor. 504–507), Υ (Köln 23–24, 28, Elephantine hoard), Y (Svor. 509–511), X (Svor. 514–516), and Ω (Svor. 519).

✱ series, whose style and alloy suggest a coinage reform, module B was restored to regular production and reigned again at the head of the bronze currency system. The impression thus gleaned from the hoards is frankly inelegant: module B was the largest and presumably standard bronze coin during most or all of the latter reign of Ptolemy II. Under his successor, at least in the first half of his reign, the largest and presumably standard bronze coin was module A. Later in the reign module B was reintroduced, replacing module A as the principal bronze coin of the monetary system.

Do these phenomena reflect actual changes in the weight standard of Ptolemaic bronze coinage? Or was monetary production simply organized in cycles that emphasized different denominations, without entailing changes in the weight standard? The smaller denominations associated with modules A and B in the hoards argue in favor of the former interpretation (see below under "Metrological Biases"). Final judgment must nevertheless be suspended pending a thorough review of Euergetes' coinage.

Any attempt to explain the apparent increase in the bronze weight standard under Ptolemy Euergetes and/or his later return to the standard of his father are merely speculative, given the present state of our knowledge. The economic dislocations resulting from the failed Nile inundations of 245 and 241 may have inspired adjustments to the monetary system. The temporary restoration of the Attic standard for gold and silver coinage in the name of Queen Berenice may represent a corresponding adjustment in the precious metal coinage. The congruence between the weight of module A and the Egyptian deben, if not simply fortuitous, may make more sense under Euergetes than under Philadelphus¹¹: the famine of 245 provoked a rebellion in the countryside severe enough to recall the king from his foreign war, and his subsequent religious-dynastic policies showed a new solicitude for the native population.¹² Eventual depletion of the kingdom's silver supply

¹¹ On the correspondence of the largest Ptolemaic bronze to the deben, see Picard (1998), citing earlier literature, Mørkholm (1991:11, 105), and Hazzard (1995:65 with n. 23).

¹² Ptolemy III and Berenice II, the Theoi Euergetai, were added to the Egyptian ruler cult in 238, inaugurating the worship of the living Ptolemies by their Egyptian

forced a greater reliance on bronze as opposed to silver coinage.¹³ This shift may somehow be associated with the eventual reversion to a lighter bronze weight standard.

METROLOGICAL BIASES

The Elephantine hoard is composed almost exclusively of module B and its thirds and sixths, modules F and I; only under Ptolemy III were different fractions added, modules D and G, the half and quarter of module B. The absence of module A may perhaps support the hypothesis that this denomination was produced only scantily under Ptolemy II. Its half denomination, module C, is also excluded, again perhaps reflecting limited production under Ptolemy II.¹⁴ While it is far from conclusive evidence, the makeup of this hoard would be more consistent with identification of module B rather than module A as the bronze drachm.

The Anubieion hoard shows a metrological bias in favor of module A and especially its half denomination, module C. Modules D and G, if their ideal weights are reckoned slightly lower, at c. 32 and c. 16 grams, could have passed as the third and sixth of module A. Only a single denomination of Ptolemy II (module F) found its way into the hoard, perhaps as the quarter of module A. Module B does not fit comfortably into this metrological system and this presumably accounts for its absence from the hoard: either it had been officially withdrawn from circulation, or it was excluded by the hoarder.

subjects. The Theoi Euergetai were made *σύνναοι* (temple associates) with all Egyptian gods throughout the kingdom; their names were added to the titles of all Egyptian priests, and a new class of Egyptian priests was created for their worship (Koenen 1994:52f). A natural corollary was increased support for Egyptian cults and temples by Ptolemy III.

¹³ For the textual evidence, see Hazzard (1995:80–81) and Maresch (1996:56, 76–80).

¹⁴ Svoronos recorded specimens of module C for the following series: unmarked (Svor. 414, 2 listed), E (Svor. 448, 4 listed), Λ (Svor. 480, 1 listed), T and Υ (Svor. 505, 8 listed), Y (Svor. 509, 5 listed), and X (Svor. 515, 1 listed).

The remaining hoards all seem to reflect an original metrological emphasis on modules A and C in the earlier stages of hoard formation (although module A itself is typically weakly represented, even absent from some hoards), superseded by a preference for module B and its half denomination D. To a considerable degree the hoards reflect the modules actually minted in particular series. A possible exception occurs with the last series, those marked **Ξ** and **ΞΕ**, which included modules B, C, D, and F, all reasonably abundant. For some reason only B and D were selected by the hoarders, although they had set aside many examples of module C struck by Ptolemy III.

It is notable that the introduction of module A as the standard bronze coin seems to have rendered module B either unavailable or undesirable for the Anubieion deposit, whereas the later reintroduction of module B as the standard bronze coin did not have the same effect on module A, to judge from the contents of the eight later hoards reviewed here. This contrast may support the hypothesis that the two denominations alternated as the bronze drachm: modules A and B stand in a metrological relation of 4:3. If module A was the bronze drachm, module B did not represent an established fractional denomination. If module B was the bronze drachm, module A might function as an octobol, an unusual denomination only rarely struck in silver by a small handful of states, notably at Ephesus during the third century.

THE HOARDS AS EVIDENCE FOR MONETARY REFORM UNDER PTOLEMY IV

The most striking feature of this group of hoards is that eight of the ten close at precisely the same point in the reign of Ptolemy IV. Conceivably, as Newell suggested, the simultaneous loss of so many hoards could be attributed to the "very serious internal troubles and rebellions which broke over the kingdom in the course of Philopator's reign" (Newell 1935:66f). Newell's explanation gains credence from the fact that all of the later hoards with documented findspots are from Upper Egypt, a center of the disaffection. Alternatively, J.G. Milne

wrote of a complete break in Ptolemaic bronze hoards, to be associated with a reform of the currency.¹⁵ Three aspects of the numismatic evidence point toward a monetary reform at this juncture:

1. The coin types represented in the hoards described here are almost completely absent from later hoards. Thus the phenomenon under study is not merely the simultaneous loss of many hoards, but the disappearance of major categories of coinage from circulation.
2. An episode of countermarking occurred at roughly the same time as the closure of these hoards. A cornucopiae countermark was applied to selected coins from the reign of Ptolemy IV.¹⁶ This countermark is overwhelmingly concentrated on module C, not only in the **ΣΕ** and **ΣΕ** series (Svor. 1145, 1149) but also on issues of module C with the monogrammatic controls **ΤΕ**, **Α**, and **Ρ** (Svor. 1140, 1142, 1144).¹⁷ Within the **ΣΕ** series module F (Svor. 994, 1146, 1151) is occasionally countermarked with the same cornucopiae, but modules B and D appear to have been exempt. The cornucopiae countermark occurs only rarely on coins of the **ΔΙ** series and has so far not been recorded for the **ΑΙ** series; neither of these series includes module C.

¹⁵ Milne (1938:205–206) was clearly referring to the same break in the hoards documented here, though his chronology was different. Milne dated the break to the early second century and associated it with a currency reform effected sometime before 182.

¹⁶ Noeske (1995:203) dates the application of the cornucopiae countermark to the early reign of Ptolemy VI. Weiser (1995:86, 140) seems to agree with this date but opens the possibility that the countermark was applied before 180. Noeske believes that all cornucopiae countermarks were applied in a single episode, including those on Svor. 1375. Jungfleisch (1947–48:57–58) distinguished two episodes of countermarking based on the style of the stamps, the care with which they were applied, and the coins affected. Jungfleisch's observation is confirmed by hoard evidence. The first episode is associated with the break in the hoards under Ptolemy IV, cited here. For more detailed exploration of the second episode, see Price (1981:159–160). Price argued that the countermarking of Svor. 1375 and Necropolis hoard F 68–72, which he placed early in the reign of Ptolemy VI, probably revalued these coins and enabled them to circulate as the equivalents of the familiar double eagle variety Svor. 1424, which followed in the next emission.

¹⁷ Noeske (1995:198) cites 33 published examples of module C with the cornucopiae countermark, and his "Korrekturzusatz" (1995:206) adds 11 more.

3. A bronze hoard in commerce in autumn 1992 (*CH* VIII, 413)¹⁸ included many specimens of module C from the Σ E, Σ E, Π E, and Δ series (Svor. 1145, 1148–49, 1140, 1142), all of them countermarked. The later hoard contents comprised large denominations of Ptolemy V, notably the double eagle varieties Svor. 1423 and 1424, which apparently represent successive reductions of module C. With average weights of c. 40 and c. 29 g, their metrology does not fit into the pattern of weights seen in third-century hoards.

In light of these facts, we may now venture an interpretation: a major reform of the bronze coinage occurred under Ptolemy IV. Modules B and D were demonetized. Savers who had hoarded these denominations were at a disadvantage, unable either to spend them in private transactions or to redeem them for the new currency. Recently minted specimens of module C, however, could be validated for continued circulation by countermarking, no doubt in exchange for a fee. This accounts for their almost complete absence from the third-century hoards. The exception is the Getty hoard, whose full original contents are unknown but which presently includes two examples of module C from the Σ E series (Svor. 1148); significantly, they are not countermarked.

PAPYROLOGICAL EVIDENCE AND HISTORICAL INTERPRETATION

There are few financial documents securely dated to the reign of Ptolemy III, and papyrologists generally assume that prices and wages remained at the levels documented for Ptolemy II.¹⁹ The crises associated with the failed Nile inundations of 245 and 241 warn against accepting this assumption uncritically. We may speculate that an increase in the bronze weight standard early in the reign of Euergetes helped to stabilize the bronze currency, whereas his ultimate reversion

¹⁸ *Coin Hoards* VIII, 413 is a portion of the hoard reported in Stephen M. Huston FPL 130, May 1994, p. 1 and 4. The hoard will be published more fully by C. Lorber and S. Huston in *Numismatic Chronicle* (2001).

¹⁹ This assumption is implicit in the chronological divisions employed by Clarysse and Lanciers (1989) and Maresch (1996).

to an earlier and lighter weight standard would have tended to shake confidence in the bronze currency and may have contributed to inflation under his successor.

By the early reign of Ptolemy Philopator economic affairs in the *chora* were normally transacted in bronze, apparently because of a shortage of silver. The established relation between silver and bronze currency ceased to obtain, as the silver stater ("tetradrachm") began to exchange for significantly more than four drachms in bronze (Maresch 1996:70–77).²⁰ Papyrological sources suggest a sharp rise in commodity prices and wages expressed in terms of bronze currency. Based on an approximate doubling in the penalties for breach of wheat contracts dated c. 214, and on a very few additional papyrological data, T. Reekmans hypothesized a doubling in the face values of Ptolemaic bronze coins in the first half of Philopator's reign, a reform he believed was effected between 221 and 216 without any recall of coinage or external marks of its new value (Reekmans 1951:61–69).²¹ Though Reekmans' opinion became virtual orthodoxy among papyrologists for over four decades, it is extremely unsatisfactory as a basis for numismatic inquiry because it is essentially unverifiable. The most recent studies, by Klaus Maresch and by Hélène Cadell and Georges Le Rider, see market forces behind both silver-bronze exchange rates and these early increases in price levels (Maresch 1996:4, 27, 58–59, 70–74; Cadell and Le Rider 1997:74–86).²²

²⁰ Maresch cites *SB XVIII* 14013 (5 June 222) as evidence that this process was under way at the very outset of the reign. The earliest unambiguous evidence is *UPZ I* 149, line 32, which records a price of sixteen drachms (plus *agio*) for one silver stater ("tetradrachm"). This document was dated by its editor to the reign of Philopator and would appear to precede the introduction of the so-called copper standard. The price of the stater ultimately reached twenty drachms (Maresch 1996:36–37, 58, 72–73, 82). According to Maresch this development is indicated by demotic papyri from the turn of the century, e.g. *P. Berlin* 13593 (Elephantine, 198 BC), and can *perhaps* be identified as early as 214/3 in *P. Köln VI* 269.

²¹ Segrè (1942:178) hypothesized a quadrupling of the face values of Ptolemaic bronze coins, based on the exchange rate recorded in *UPZ I* 149, line 32 (see note 20). Reekmans explained this rate as the effect of 100% inflation in combination with the doubling of the nominal values of the bronze coinage.

²² Hazzard (1995:82) describes an official reform of the exchange rate without mentioning changes in the bronze currency.

Truly extraordinary price increases are recorded in other primary documents, some arguably datable to the reign of Ptolemy IV, others securely fixed in the reign of Ptolemy V. For example the price of an artaba of wheat rose from an average of 5–6 drachms in the earlier reign of Ptolemy IV to 150–180 drachms—a thirty-fold elevation (Cadell and Le Rider 1997:60). The extremity of the increases led papyrologists to deduce that the original system of reckoning, with a silver stater (“tetradrachm”) divisible into four drachms or twenty-four obols, was ultimately replaced by a new system of reckoning (“the copper standard”) based on a very small theoretical unit, the copper drachm or drachm of account (Heichelheim 1930:12–13; Reekmans 1948:17–23, 1951:69–75; Maresch 1996:1–7, 21–23).²³ F.M. Heichelheim placed the transition from the old to the new system between 214 and 210 (Heichelheim 1930:16–18). Reekmans sought to date the first introduction of the new system very precisely, to 13 April–2 July 210 (Reekmans 1951:19–23). Maresch has reaffirmed the position that it was in use perhaps as early as 214 or 213.²⁴ According to this school of thought, the new reckoning did not supplant the old either immediately or universally. Occasional small transactions were reckoned on the silver standard at least as late as 209.²⁵ And use of the new system cannot be clearly documented for Upper Egypt until considerably later, leading to the suspicion that it was adopted only after the collapse of the rebel state.²⁶ Experts in papyrology are not normally in a position to determine for themselves whether the

²³ For a recent discussion in English, see Hazzard (1995:83–84 with n. 53). All of these scholars hypothesize a ratio of 1:60 between the original bronze drachm and the reformed or so-called copper drachm. The traditional term copper drachm is somewhat infelicitous, in that it may seem to imply a change in alloy; the German term *Rechendrachmon*, drachm of account, seems preferable.

²⁴ Maresch (1996:21, 72–73) cites *P. Köln* VI 269 as possibly the earliest document to employ the new system of reckoning.

²⁵ Maresch (1996:6, 21 n.3) cites *P. Heid.* VI 383 [8] and 20 (209 BC) for a wheat price on the silver standard.

²⁶ This idea was first proposed by E. Révillout in 1891 (Reekmans 1948:23 n. 1). Reekmans (1951:80 n.1) cites continued use of the silver standard for small sums in *O. Tail.* I 39 (207 or 190 BC) and *O. Tail.* I 96 (181–180 BC). For recent reiterations of this view, see Clarysse and Lanciers (1989:119–120) and Maresch (1996:39).

change in accounting practices was accompanied by changes in the coinage, but generally have assumed that it was not (Reekmans 1951:72).²⁷

The dates proposed for the earliest introduction of the new system of reckoning depend on controversial datings of a group of ostraka from Philadelphia in the Arsinoite nome (*BGU* VII, 1500–1562) which—to the extent that they bear dates at all—record regnal years without specifying the reign. Cadell has critically reassessed the documents relating to grain transactions between c. 305 and 173, arguing that the price levels attested in *BGU* VII 1505, 1532, and 1536 are incompatible with grain prices securely dated to the reign of Philopator but consistent with those from the early second century; in consequence she dates these ostraka to the 180s (Cadell and Le Rider 1997:47–49). She tentatively suggests a date c. 208–206 for the first clear indication of a rupture in the fixed relation between silver and bronze currencies (Cadell and Le Rider 1997:52–56). But Cadell and Le Rider reject the notion of a “copper standard” or a new system of reckoning, submitting that the price increases under Ptolemy IV and V can be understood in terms of natural, if extreme, pulses of inflation due to forces of supply and demand (Cadell and Le Rider 1997:59–64, 70–86).

As we have seen, however, hoard evidence points unequivocally to a demonetization of circulating bronze currency during the reign of Ptolemy IV. So extreme a measure can hardly be unrelated to the perturbations recorded in papyri and ostraka. The numismatic record thus vindicates papyrologists who have surmised some sort of monetary manipulation at the root of these sharp price increases, though the specifics of their claims may be unacceptable. The demonetization cannot be dated too early in Philopator’s reign because of the quantity of bronze coinage that preceded it: the substantial issues marked Λ and Δ ; further substantial issues marked Σ , Ξ , and $\Sigma\Xi$; and the issues with monogrammatic controls $\Pi\Xi$, Π , and Π (Svor. 1140, 1142, 1144), not represented in our hoards but definitely prior to the episode of

²⁷ The recent collaboration of the papyrologist Maresch and the numismatist Weiser also seems not to posit any significant physical change in the coinage of Ptolemy IV (Weiser 1995:58–63). Hazzard (1995:83) discusses this reform as a change in accounting practices without specific allusion to the coins involved.

countermarking.²⁸ The papyrologists' dates of c. 214/3–210 for introduction of a new system of reckoning permit a possible correlation with the demonetization attested by the hoards, but require us to posit intense bronze production from the beginning of the reign to the time of the reform. Ironically, it is the cautious chronology of Cadell and Le Rider that best fits our data, because it allows virtually the entire reign of Ptolemy Philopator for production of this extensive bronze coinage. The demonetization can tentatively be placed in the period c. 208–206, assuming some relation to the abandonment of a fixed ratio between silver and bronze currency. A gap in the sources leaves us ignorant of the immediate effect on prices and wages, but a thirty-fold increase in prices is apparent in documents from the 190s and 180s.²⁹ Full publication of *CH* VIII, 413 may shed some light on the intervening developments.

The evidence of our hoards supplements the documents in another way, showing that Philopator's reforms were effected throughout Egypt: of the eight hoards that close in the reign of Ptolemy IV, the three with indisputably known findspots hail from Upper Egypt, which seceded as a separate kingdom in 205.

Note Added in Proofs

More supporting evidence comes from Noeske (1998). Noeske added two new hoards, Egypt before 1914 and Xios 1995 (his nos. 9 and 10), which closed in the reign of Ptolemy IV at the same point as the eight latest hoards cited above. Noeske's interpretation differed in important respects from that presented here.

APPENDIX: THE COST OF REFORM

We have speculated on the face values of modules A and B in our hoards, hypothesizing that module B served as the bronze drachm

²⁸ Newell (1935:64) noted the occurrence of countermarks on these issues. Milne (1908:32) stated that these varieties are common, which would imply emissions of some size for these as well.

²⁹ This gap is emphasized by Cadell and Le Rider (1997:75).

under Ptolemy II and from the latter reign of Ptolemy III, while module A was the drachm in the interval between. We can thus calculate hypothetical cash values of most of the hoards under consideration:

Elephantine hoard (intact): 580 drachms, 5½ obols

Anubieion hoard (intact): 134 drachms, 4 obols

Newell hoard (incomplete): 67 drachms, 4 obols

Getty hoard (incomplete): 115 drachms, 2½ obols

Ramesseum hoard (intact): 53 drachms, 1 obol

IGCH 1697: 35 drachms

IGCH 1696: 41 drachms, 4 obols

IGCH 1698: 89 drachms, 4 obols

Carnarvon hoard (intact): 34 drachms, 2 obols

We have no way to estimate the original size of the Newell and Getty hoards, but the other hoards that closed in the reign of Ptolemy IV, presumably because of a currency reform, have less value than the two hoards deposited under Ptolemy III.

The losses incurred as a result of currency reform can perhaps be put into perspective through comparison with some monetary figures from daily life. Pestman has calculated that an adult could survive on ten artabai of wheat per year (Pestman 1993:347–349). Through much of the third century, the average price of wheat was about 1.5–2 drachms per artaba,³⁰ meaning that 15 to 20 drachms per year could provide a bare subsistence. In the same period, the wage of a laborer ranged from 2.5 to 5 drachms per month, or 30 to 60 drachms per year (Clarysse and Lanciers 1989:117). The values of the Elephantine hoard and of the Anubieion deposit are multiples of these figures. By way of contrast, from the inflationary period under Ptolemy IV, before introduction of the new system of reckoning, wheat prices averaged 5–6 drachms per artaba (Cadell and Le Rider 1997:60).³¹ Probably a subsistence income for a single person now lay in the range of 60 to 75

³⁰ Clarysse and Lanciers (1989:117) calculated an average of 1.5 drachms. Cadell and Le Rider (1997:59) propose a mean price of 2 drachms.

³¹ Maresch (1996:181) cites *UPZ* I 149, 24 for a price of 7.5 drachms per artaba, but Cadell and Le Rider (1997:52–53) argue that the passage does not refer to wheat, but to bread.

drachms per year. The hoards abandoned in this period represent sums in this general range—some slightly more, most rather less.

It goes without saying that these hoards were not amassed by people living at subsistence level, and thus their losses did not represent a year's livelihood. But the losses were still far from negligible. Could the benefits of currency reform have been great enough to compensate for individual losses on this scale, or did such losses fuel the disaffection that culminated in armed revolt against the Crown? From his study of the documentary evidence, Reekmans concluded that introduction of the copper standard halted rampant inflation and restored the balance between prices and wages (Reekmans 1949:333). Curiously, he alleged that only the working classes had suffered from inflation, though it seems self-evident that the value of savings had also eroded, a matter of obvious interest to our hoarders. Reekmans also documented apparently lasting damage to the availability of credit and to investment, though he credited the introduction of the copper standard for a partial normalization of social conditions as protest banditry subsided (Reekmans 1949:327–329, 332, 338). In addition to these economic and social effects, it is possible that the currency reform offered compensation on a strictly monetary level, if the counter-marking of module C associated with the closure of these hoards represented an increase in value large enough to offset the loss of these demonetized savings.

KEY TO PLATES

The coins illustrated are examples of the varieties represented in the hoards, but are not actually from the hoards described in this article unless so indicated.

Plate 12, Ptolemy II

1. Module A: ANS (Newell) 1944.100.75948
2. Module B: ANS (Newell) 1944.100.76002
3. Module C: ANS (Newell) 1944.100.76309
4. Module I: ANS (Newell) 1944.100.75967

Plate 13, Ptolemy III, A series

5. Module A: ANS (Newell) 1944.100.76324

- 6. Module C: ANS (Newell) 1944.100.76306
- 7. Module D: ANS 1935.117.1094
- 8. Module G: ANS (Newell) 1944.100.75966
- Plate 14, Ptolemy III, E series (with variants)
 - 9. Module A: ANS (Newell) 1944.100.76281 ex Lower Egypt hoard (*IGCH* 1691)
 - 10. Module C: ANS (Newell) 1944.100.76292
 - 11. Module C: ANS (Newell) 1944.100.76302 ex Lower Egypt hoard (*IGCH* 1691)
 - 12. Module C: ANS (Newell) 1944.100.76303
 - 13. Module I: ANS 1974.26.5539
- Plate 15, Ptolemy III, unmarked and ✱ series
 - 14. Module A: ANS (Newell) 1944.100.75944
 - 15. Module B: ANS (Newell) 1944.100.76336
 - 16. Module B: ANS (Newell) 1944.100.76316
 - 17. Module D: ANS (Newell) 1944.100.76321
 - 18. Module F: ANS (Newell) 1944.100.76325
- Plate 16, Ptolemy IV, ΔI and ΔI series
 - 19. Module B: ANS (Newell) 1944.100.77229
 - 20. Module D: ANS (Newell) 1944.100.77230
 - 21. Module B: ANS (Newell) 1944.100.77222
 - 22. Module D: ANS (Newell) 1944.100.77234
- Plate 17, Ptolemy IV, ΣE and ΣE series
 - 23. Module B: ANS (Newell) 1944.100.77238
 - 24. Module C: ANS (Newell) 1944.100.77254
 - 25. Module D: ANS (Newell) 1944.100.77248
 - 26. Module B: ANS (Newell) 1944.100.77240
 - 27. Module B: ANS 1974.26.5583
 - 28. Module D: ANS 1952.142.462

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THREE SELEUCID NOTES

(PLATES 18–20)

BRIAN KRITT, OLIVER D. HOOVER, AND
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This collection of short articles utilizes the approach used in *AJN* 5–6. The “notes” format provides an opportunity to publish together articles too short for single submissions. More importantly, it is a method to announce new discoveries in a single specialized field, conveniently collected for scholars in that field. It is the hope of the present authors that it will continue to be a useful vehicle for scholars of Seleucid numismatics.

The notes are arranged chronologically:

- I. Coinage of Antiochus III in Bactria (BK)
- II. A Unique Tetradrachm of Demetrius II Nikator at Seleucia-in-Pieria (OH)
- III. A Mint of Antiochus IX at Samaria-Sebaste? (AH)

I. COINAGE OF ANTIOCHUS III IN BACTRIA

BRIAN KRITT

Seleucid control of Bactria led to the operation in that province of at least two royal Seleucid mints, beginning c. 290 BC at a mint of uncertain location (Mint A), and continuing a few years later at the

far northeastern city at Ai Khanoum.¹ Based on the evidence of the bronze coins found in the French excavations at the site of Ai Khanoum between 1965 and 1978, this city was the source of the Seleucid coins with the delta-circle monogram, whose attribution to the provincial mint at Bactra by Newell (1938) had not previously been questioned. Ai Khanoum quickly became the principal Seleucid mint in Bactria. The fact that the Seleucid bronze coin types found in the excavations had never been seen before,² and that numerous examples of the individual types were found at the site, combined with the appearance of the delta-circle monogram from the coins on bricks found in the excavations were important elements in establishing that Ai Khanoum, not Bactra, was the location of issue.

The last Seleucid coins from Ai Khanoum appear to be those of Antiochus II, with his bronzes from that mint bearing types relating to Hermes, connected to the usurper Diodotus, who eventually seceded from the Seleucid Empire and ruled Bactria as an independent monarch. These Hermes-type bronzes in the name of Antiochus II apparently represent an intermediate stage in the secession, with Diodotus retaining nominal recognition of the Seleucid overlord.³

Ai Khanoum may have remained the initial mint of the Diodotids (cf. Krit 1996:Chapter 5). Holt has accepted Ai Khanoum as the mint for three groups of Hermes bronzes in the name of Antiochus II, of type Hermes bust/caduceus (his G2–G4), but not for the type Hermes bust/crossed caducei (*ESM* 716–716A, his G1), as well as the mint for some of the royal Bactrian bronzes in the name of Diodotus (II) and Euthydemus (cf. Holt 1999:96, 114, 124, 132).⁴ The crossed-caducei coins he assigned to a second, uncertain mint, possibly

¹ The analysis and attribution of the coins from these mints were presented in full detail in *SCB* (Kritt 1996).

² With the exception of a single Mint A bronze (Kritt 1996:25 II).

³ The coins are *ESM* 716 and 716A, *SCB* pp. 37–38 coins 6 and 7, Plate 4 N and P (Kritt 1996), Holt G2 and G3 (Holt 1999:164–165), and possibly *SCB* p. 26 V 2 (Kritt 1996).

⁴ “It is possible, as noted above, that Ai Khanoum was the only mint during the last years of Seleucid rule and the first years of Diodotid hegemony” (Holt 1999:125).

Bactra, on the basis of the lack of monogram and variable die axes.⁵ Actually, *most* crossed-caducei coins have the usual six o'clock die axes of Ai Khanoum.⁶ The appearance of the planchets and the method of edge finishing of the crossed-caducei coins are identical to those of Holt's G2 and G3 single caduceus coins (cf. photos of G1 and G3 in the plate), and most specimens exhibit the characteristic red-brown patina associated with Ai Khanoum bronzes (cf. Bernard and Guillaume 1980:9–10). The dropping of the monogram has clear precedents at Ai Khanoum in the earlier Seleucid period (cf. Kritt 1996:42), and could presage this practice with succeeding royal Bactrian bronzes, such as those of Euthydemus. Thus the crossed-caducei coins are likely issues of Ai Khanoum also.

The Seleucid coinage in Bactria has been considered to have ended with the coins of Antiochus II struck at Ai Khanoum.⁷ But new evidence from recently discovered coins now calls this assumption into question. First, two Bactrian Seleucid bronzes have turned up with Seleucid anchor counterstamps. One of these coins is an unquestioned Ai Khanoum bronze of Antiochus I, *SCB*, p. 26, Type IV 3, Heracles head/bull (Plate 18 no. 1). The second coin is an example of the Antiochus II crossed-caducei bronze type (Plate 18 no. 2).⁸ Both counterstamps are fresh, and evidently affixed after the coins had been in circulation for a long time. *SCB* Type IV 3 is the most prolific Seleucid bronze issue found in the excavations at Ai Khanoum, with 36 speci-

⁵ No crossed-caducei coins (G1) were found in the excavations at Ai Khanoum, but neither were there any single-caduceus coins (G2–G4), whose delta-circle monograms assure their origin at the local mint.

⁶ Of the nine known specimens, only two can be verified as deviating from six o'clock die axes. There are ample precedents for occasional departures from established die-axis conventions for Seleucid issues (e.g., Le Rider 1965:23 [Ecbatana, Seleucus I], 135–136 [Seleucia on the Tigris, Seleucus IV]; Kritt 1997:n. 229, n. 183; for the complex and changing nature of the die-axis conventions for earlier Seleucid bronzes at Ai Khanoum, cf. Kritt 1996:28–30).

⁷ "There is no evidence of any later [after Antiochus II] Seleucid mintage from Bactria..." (Holt 1999:95).

⁸ J. Winter Collection, Lancaster, Pa. The obverse of this coin has been sharpened by tooling, for commercial reasons, so the reverse is the better indicator of the worn state of the undercoin. All other coins illustrated in this article are from the author's collection.

mens represented. No specimens of this type were known before the excavations.⁹ Like other Seleucid bronzes of Ai Khanoum, it enjoyed only local circulation. For such a local type to be thus counterstamped argues for this to have happened at Ai Khanoum. This is strongly supported by the following totally new bronze coin varieties, published for the first time, here attributed as issues of Antiochus III at Ai Khanoum, c. 208–206 BC (Plate 18 nos. 3 and 4)

Obv.: Laureate head of Apollo r.

Rev.: Tripod; to r, inverted anchor. No borders.

3. In exergue, worn but legible inscription: . NTIOXOY .

To l, facing l, faint inscription: . . ΣΙΑΕ . .

↑, 8.07g, 22 mm, thick flan, beveled edge, edge technique a (cf. Krittr 1996:27–28), red-brown patina.

Burtonsville, Md. B. Krittr Collection.

4. Inscriptions illegible. In exergue, possibly . . ΣΙΑΕ . .

↓, 17.00 g, 27 mm, thick flan, beveled edge, edge technique a, red-brown patina.

Burtonsville, Md. B. Krittr Collection.

In c. 212 BC, Antiochus III undertook an expedition into the East in an attempt to recapture the lost Seleucid satrapies of Central Asia. In Bactria, he encountered and defeated the cavalry of the Bactrian king Euthydemus at the River Arius, and besieged the latter at Bactra for two years, 208 to 206 BC. A treaty was then negotiated, which allowed Euthydemus to remain as king of Bactria, and Antiochus departed to India (Polybius 10, 11; Holt 1999:Chapter 7).

Holt analyzed Euthydemus's coinage to find evidence of this famous episode. For the precious metal coinage, he identified two distinct sets of issues (A and B), differing in technical elements, such as reverse border. He dated the transformation from A to B to the period of

⁹ Subsequently three specimens have been found in archeological context at Takht-i-Sangin and Dil'berdzin, on the natural Oxus trade route (cf. Krittr 1996:39). A few other specimens have appeared in commerce due to pillaging of the area around Ai Khanoum (cf. Krittr 1996:27; Holt 1999:50), or the looting of museums (cf. Holt 1999:88 n. 5). For the very limited area of diffusion of the Seleucid Ai Khanoum bronzes, see *SCB* (Krittr 1996:27).

Antiochus's invasion, 208–206 BC (Holt 1999:130–133). For the bronzes, with types of Heracles head/prancing horse, there are two distinct groups. For one group, the fabric is thick, the edges heavily beveled, and there are no monograms. For a second (later) group, the planchets are thin, the edges rounded, and there are control marks. The die axes are variable for both groups. A large number of examples of the first group were found in the excavations at Ai Khanoum, but none of the second group. This led Holt to suggest that "Ai Khanoum itself may have produced many of the earlier [thick flan] coins, but not the later [thin flan] ones" (Holt 1999:132).

One of the thin bronzes has a (Seleucid) anchor symbol on the reverse below the horse (Bopearachchi 1991:162, 34). Holt believes that this is a "chronological hinge" between the two phases of coinage, and was struck in 206 BC at the time of the treaty, to acknowledge Antiochus's nominal suzerainty. At this time, Ai Khanoum ceased striking the Euthydemus bronzes, and the second group is assigned by Holt to Bactra.

The fabric of the new coins 3 and 4 is very close to that of the thick flan Euthydemus bronzes (cf. Plate 18 no. 5), indicating a common, contemporary origin.¹⁰ The reverse type of the tripod had not been seen on Seleucid coins of Bactria previously, but both obverse and reverse of 3 and 4 are very close in type and style to issues of Antiochus III assigned by Newell to Apamea, WSM 1187–1188, dated by Newell to 223–208 BC (cf. Plate 18 no. 6). Although the location of the "Apamea" mint has been questioned recently (cf. Le Rider 1999:49, 90; Houghton and Spaer 1998:90),¹¹ the referenced coins are western in fabric, have the twelve o'clock die axes common in Syria in this period, and have provenances in that area. The new Bactrian versions seem to have been copied from or modeled on the "Apamea" coins, even in the denominational system,¹² but employed the fabric of

¹⁰ The shape of the flans and angle of the beveled edges of coins 3 and 5 are strikingly similar.

¹¹ The mint has been associated with the vicinity of Antioch.

¹² Both the smaller and larger coins 3 and 4 have equivalent denominations at "Apamea," but the weight of 3 also falls well within the nominal range of the Euthydemus specimens found at Ai Khanoum.

the contemporary Ai Khanoum bronzes of Euthydemus. The borrowing in Bactria of types from farther west has been discussed in detail in *SCB* (Kritt 1996:13–15).

Furthermore, coins 3 and 4 have the characteristic red-brown patina of Ai Khanoum bronzes, and were obtained by the author, together with a group of earlier Seleucid Ai Khanoum bronzes (including coin 1 above), from Pakistan in the usual commercial channels for coins exported from Afghanistan. Although the Syrian models have twelve o'clock die axes, the Ai Khanoum copies appear to have the non-adjusted convention characteristic of the Euthydemus bronzes from Ai Khanoum. The new coins also replace the Apamea legend placement with a format used extensively for earlier Seleucid coins in Bactria (cf. Kritt 1996:46), including the cover coin of *SCB*, an Antiochus I Ai Khanoum bronze. The published "Apamea" coins do not have the subsidiary symbol of the vertical anchor found on coins 3 and 4, but an unpublished "Apamea" coin in the author's collection *does* (Plate 18 no. 7).¹³

Finally, Bactra itself is ruled out as the mint for the new Antiochus III coins. They are unlikely to have been struck there since Antiochus never captured the city (cf. Polybius 10, 11; Holt 1999:129). Not only does this strengthen the argument for Ai Khanoum as the mint, but has repercussions for the earlier Seleucid period in Bactria. Bactra has often been favored as the principal mint of the Seleucids in Bactria on the grounds of historical likelihood, because of its prominence physically and historically, even in the face of direct archeological evidence to the contrary (cf. Kritt 1996:22–23; Bopearachchi 1999). Now the new Antiochus III coins join the extensive Euthydemus thick bronze issues and other Diodotid bronzes in a continuing series at a clearly prominent mint demonstrably not at Bactra.

Without the evidence of coins 3 and 4, the counterstamped coins 1 and 2 would present a substantial problem. Who would affix a Seleucid anchor to these coins? Although there was still a Seleucid presence in Bactria somewhat after the issuing of 1, the coin is worn, and had seen

¹³ To avoid confusion in interpreting this coin, it should be pointed out that the reverse has a counterstamp of a double-axe at four o'clock, oriented toward four o'clock.

long circulation before the addition of the counterstamp, which is much fresher than the undertype. But coin 2, also worn (cf. n. 8), was issued under Diodotid control, near the end of the co-regency of Diodotus II according to Holt (1999:110–111), long after the departure of the Seleucids from Bactria. Thus a later Seleucid presence would appear to have been responsible for the counterstamps.

Seleucus II mounted an eastern expedition in the later 230s BC, campaigning against the Parthians, but failed to reach Bactria (cf. Newell 1938:202; Bevan 1902:1.289). This really leaves only the time of the eastern campaign of Antiochus III as the possible period when these counterstamps were affixed. This argument would be weak by itself, but with the new coins 3 and 4, the picture becomes clearer. The counterstamp on coin 1 places a Seleucid minting presence at Ai Khanoum. The likely attribution of coins 3 and 4 as Bactrian issues of Antiochus III establishes a chronology for the counterstamp, which then reinforces the attribution of coins 3 and 4 to Ai Khanoum. This is likely on independent grounds, based on the arguments above.

Coin 2, the crossed-caducei issue, would also seem to have been counterstamped at Ai Khanoum, the site of the new Seleucid minting operations. The counterstamp is patinated over with the red-brown Ai Khanoum patina.¹⁴ The area of diffusion for this type may have been greater than for the other Seleucid Ai Khanoum bronze types, since it was known before the French excavations (cf. Kritt 1996:27, 35, 37–38). There is a precedent for this at Susa, where the diffusion pattern for Seleucid bronzes is also very limited, with the exception of

¹⁴ It is of course possible that the counterstamps were affixed elsewhere, possibly by a mint moving with the forces of Antiochus, but the available evidence presented above strongly favors Ai Khanoum. In addition, the remarkable similarity between the planchets of coins 3 and 5 (cf. n. 10) could be explained if coin 3 were struck on a leftover unstruck Euthydemus planchet. Then the extreme rarity of coins 3 and 4 could point to a brief coining episode at Ai Khanoum, without the time being taken to prepare fresh planchets. This would certainly provide a rationale for the counterstamps. Coin 4, the quadruple, would not have a Euthydemus prototype, but perhaps the larger planchets had been produced for an anticipated Euthydemus quadruple, or one which has not survived. Since Euthydemus had smaller denominations at Ai Khanoum, a multidenominational system for him is certain.

a single issue which circulated widely, the Seleucus I Susa Alexander bronzes (Kritt 1997:118–120).

There are of course important historical consequences of these ideas. First of all, the forces of Antiochus III appear to have captured Ai Khanoum at some time during the campaign. Or the city could have welcomed him, possibly due to its old affection for his Seleucid ancestor Antiochus I (cf. Kritt 1996:34). Now we have a cogent reason for the cessation of the production of the thick Euthydemus bronzes at this time.¹⁵

There is archaeological evidence at Ai Khanoum of an attack, possibly that of Antiochus III: “Then, in ca. 225 B.C., a serious attack did occur. Not only burning but sapping operations as well were carried out against the city’s walls. The excavation team found no reason to associate this warfare with the Seleucid invasion of Antiochus III of 208–206 B.C.” (Holt 1999:54). Holt thus associated this attack with the rise of Euthydemus (Holt 1999:125). The evidence of the new coins provides a clear background to redate this activity to the time of Antiochus’s capture of the city.

Another consequence of these ideas is to reinforce the significance of Ai Khanoum to the Seleucids. Probably built by Antiochus I during his co-regency with Seleucus I, the city was of great importance as a source of precious metals and other mineral wealth, as well as because of its strategic position along eastern invasion routes (cf. Kritt 1996:33–34; Bernard 1982:148). It must also have been held in memory as a shining jewel of early Seleucid enterprise. Such a prize would have been a worthy reward for Antiochus’s expedition to recover the lost Seleucid glory in Central Asia.

¹⁵ “The war with Antiochus could easily have suspended most minting operations except at Bactra, giving rise to a consolidation of coinage manufacture that persisted after the immediate danger had passed” (Holt 1999:132). In other words, Holt derives the cessation of the thick Euthydemus bronzes at this time from a war-time policy of the localization of minting to Bactra. Its true cause was the capture of Ai Khanoum by Antiochus.

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Abbreviations

ESM = Newell 1938

SCB = Kritt 1996

WSM = Newell 1941

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II. A UNIQUE TETRADRACHM OF DEMETRIUS II NIKATOR AT SELEUCIA-IN-PIERIA

OLIVER D. HOOVER

As is often the case in Seleucid numismatics, a new coin type previously unknown in the literature has come to light. At the beginning of this year a silver tetradrachm (15.71 g) struck in the name of Demetrius II Nikator (first reign 145–138 BC) was donated to the American Numismatic Society (ANS 2000.14.2) through the kind offices of Herb Kreindler. Its description is as follows (Plate 19 no. 1).

Obv.: Diademed head of Demetrius II r.; filleted border.

Rev.: On r., **ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ**; on l., **ΝΙΚΑΤΟΡΟΣ**; inverted anchor; laurel wreath border.

This coin has no date, symbol, or control mark.

Upon inspection of the details of the anchor it becomes clear that the tetradrachm is closely related to a series of drachms (Obv.: Diademed head of Demetrius II r.; dotted border. Rev.: On r., **ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ**; on l., **ΝΙΚΑΤΟΡΟΣ**; inverted anchor (Plate 19 nos. 2 to 4) and two series of bronze coins (Plate 19 nos. 5 to 6) attributed by Houghton and Spaer to an uncertain North Syrian mint (Houghton and Spaer 1998:1634–1636, 1639–1640; Houghton 1983: 567–570; *BMC Seleucids* 61, 25). The first bronze series (Plate 19 no. 5) uses the same types as the drachms but the second series (Plate 19 no. 6) gives the titles of Demetrius as **ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ ΘΕΟΥ ΝΙΚΑΤΟΡΟΣ**. The style of the ANS tetradrachm and its close association with a system of related silver and bronze fractions makes it very

likely that the mint at which they all must have been struck was located in one of the major cities of Syria Seleucis under the control of Demetrius II.

The first reaction is to consider Antioch-on-the-Orontes, the most important royal Seleucid mint in the mid-second century BC. However, because the obverse of the tetradrachm is not known to have been used for other emissions at Antioch it is unlikely that it was struck at this mint, although it is not entirely impossible that such a die might be discovered in future. The reverse is entirely unique for the denomination at any Seleucid mint in any period. Likewise, neither dies nor control marks link the drachm or bronze series to Antioch. Indeed these issues can be found either entirely without controls, with a monogram to the right of the anchor (Plate 19 no. 2), or a lily symbol to the left (Plate 19 no. 3) in the case of the silver. At least one series of the drachms was also dated, for an example in the ANS collection (Plate 19 no. 4) is marked **PO** (170 of the Seleucid Era = 142/1 BC). The bronze pieces with the fuller titulature of Demetrius are entirely free of controls, while the coins with his single epithet often have an indistinct symbol to the left of the anchor, which has been interpreted as a pentalpha.

For iconographical reasons a more likely mint might be that of Seleucia-in-Pieria. Here, wreathed reverses were extremely popular in the second century BC for both silver and bronze coinages. Laurel wreaths surround the reverse types of both the royal tetradrachms (Plate 19 no. 7) and quasi-municipal bronze issues (Plate 19 no. 8) of the city under Antiochus IV Epiphanes (175–164 BC). They also reappear on the quasi-municipal pieces (Plate 19 no. 9) struck under Alexander I Balas (150–145 BC). A commemorative tetradrachm series (Plate 19 no. 10) was also struck by Alexander at this mint bearing a reverse type encircled by a wreath of grain ears (Houghton 1982:153–158; Houghton 1983:409). During the second reign of Demetrius II Nikator (129–126/5 BC), following his return from captivity among the Parthians, the laurel wreath border can be found on the reverses of his Seleucian coinage (Plate 19 no. 11) as well as on those of his enemy, Alexander II Zabinas (128–123 BC). Admittedly, stephanophoric reverses were not unique to Seleucia-in-Pieria. By the time of the first reign of Demetrius II they had already been used at Antioch

and an uncertain North Syrian mint for the coins of Antiochus VI Dionysos (145–142/1 BC) (Houghton 1983:232, 234–236, 579) and Alexander I Balas (Plate 19 no. 12), although in these cases the wreaths were made of lotus (Plate 19 no. 13) and ivy respectively. Nevertheless, reverses wreathed with laurel were extremely rare at other mints prior to and during the first reign of Demetrius II. The only known example is the bronze series issued by Alexander I from an uncertain, probably North Syrian mint (Plate 19 no. 14) (Houghton 1983:560).¹⁶ Based on this overview it seems reasonable to suggest that up until the general introduction of laurel wreathed reverses on royal tetradrachms (Plate 20 no. 15) by Antiochus VII Sidetes (138–129 BC) such reverses were the special trademark of the Seleucian mint. Thus, the ANS tetradrachm may reasonably be supposed to have been struck here, and by extension its associated drachm and bronze issues.

It is also possible that the anchor type may point to an origin at Seleucia-in-Pieria. In Seleucid ideology the anchor emblem was closely associated with Seleucus I Nikator, the founder of the dynasty. The link between Seleucus and the anchor seems to have taken place early on in his career. When Antigonus Monophthalmus drove Seleucus out of his Babylonian satrapy in 315 BC and compelled him to seek aid at the court of Ptolemy I he was quickly placed in charge of an Egyptian fleet and directed to attack Antigoniid coastal positions. During this period the Syrian island-city of Aradus served as a base for the naval operations of Seleucus and when the civic mint issued its series of Alexandrine coinage (Plate 20 no. 16) the symbol of an inverted anchor was included in the left field to represent the successful admiral of Ptolemy. This is the first known occurrence of the Seleucid anchor on coinage (Houghton 1998:145–146).

The surviving literary sources further elaborate on the connection between Seleucus and the anchor. According to Justin, the originator of the Seleucid dynasty was actually the product of a miraculous coupling. Supposedly Apollo, a god who was very dear to the Seleucids, slept with Laodice, the future mother of Seleucus. The next morning Apollo advised her that she would give birth to a son who, when he

¹⁶ It is tempting to assign this series to Seleucia-in-Pieria, because of both the laurel-wreathed reverse and the obverse type of Zeus, the patron deity of the city.

was grown, should be given a token of his divine parentage. As it turned out, this token was a signet ring with the image of an anchor carved into its bezel (Justin 15.4). Appian says that Seleucus later lost this ring along the Euphrates River, fulfilling a prophecy that he would rule wherever it was lost. He also offers another explanation for the anchor association. He says that Seleucus stumbled over a buried anchor when he was setting out to reclaim Babylon from Antigonus in 312 BC, portending safety in the coming campaign. It was supposedly because of this incident that Seleucus chose an anchor for his seal device (Appian *Syr.* 56).

As we can see, the links between Seleucus and the anchor were very strong both through the historical circumstances of his early years and through the political mythology that he and his heirs developed. Thus, it might have been appropriate for a city named after Seleucus to strike coins with his anchor symbol. This would certainly apply to Seleucia-in-Pieria for not only was this city named in honor of its royal founder but it was also his final resting place. The murdered Seleucus was ultimately entombed and worshiped in the guise of Zeus at the Nikatoreion which was erected in Seleucia-in-Pieria. Nevertheless, while this suggestion seems reasonable enough on the surface it is not entirely convincing since a wide variety of mints throughout the Seleucid empire had issued coins marked with an anchor from the time of Antiochus I Soter down to the period in which the ANS tetradrachm was struck.

Instead we should probably best understand the use of the anchor on the tetradrachm and the related series as an attempt by Demetrius II to promote himself as the legitimate Seleucid king in the face of the usurping Antiochus VI and his master Diodotus Tryphon. After all, there was a tradition that Seleucus had an anchor-shaped birthmark on his thigh and that this same mark could be found on all true Seleucid kings as a sign of their legitimacy (Justin 15.4). The anchor also had a long history as the emblem of the legitimate Seleucid government, appearing not only on coins but also on seals used by state officials and on the shields of the military. In essence it was a shorthand symbol for the power and rightful authority of the true Seleucid king.

From the very outset of his reign Demetrius II was in great need to convince the Syrian cities of his legitimacy, despite the fact that he gained the throne by destroying the usurper, Alexander I Balas. He was so deeply distrusted that Demetrius was only received in the capital at Antioch thanks to the influence of Ptolemy VI Philometor. Distrust quickly turned into hate when Demetrius repressed the riots for which the Antiochenes were famous with deadly force. Within two years Antioch ejected Demetrius and welcomed Antiochus VI and Diodotus in his place (Diodorus 33.4a; 1 Maccabees 11:56). Faced with the loss of the capital, the possession of which had also come to be a sign of the legitimate ruler (Grainger 1990:125), and the defection of several other Syrian cities Demetrius and his court moved to Seleucia-in-Pieria where his wife was already residing. This was to be the new base of operations for the struggle against the usurpers.

The date of 142/1 BC provided by the drachm associated with the ANS tetradrachm fits almost perfectly with the establishment of Seleucia-in-Pieria as the new seat of Demetrius's government. The numismatic evidence indicates that Demetrius completely lost the mint of Antioch around 143/2 BC, the year in which his bronze coinage ceased to be struck there. In the previous year his silver had already been replaced by issues in the name of Antiochus VI (Houghton 1992:120, 132). With the loss of this major mint and the city to which it belonged it would not be very surprising for Demetrius to have issued his unusual anchor series from Seleucia, for it both advertised Demetrius as the rightful Seleucid ruler and honored Seleucia-in-Pieria as the new capital. It is worth noting that Seleucia was one of the two major Seleucid seaports, a fact that would also make anchor symbolism appropriate in this city.

The very uniqueness of the ANS tetradrachm and the lack of controls that one would expect on a normal coin issue make it likely that it and the unmarked drachms associated with it were minted with a commemorative purpose in mind. Presumably the dated and marked silver and bronze followed after the commemorative series as a more regular issue.¹⁷

¹⁷ Undated issues often precede dated issues at major Syrian mints such as Antioch.

Acknowledgments

I would like to thank Ute Wartenberg and Elena Stolyarik for their assistance in accessing the ANS material. Thanks are due to Arthur Houghton for commenting on an earlier draft of this paper and for providing both additional photographs and the information from his forthcoming study of the silver coinages of the Antioch mint. All conclusions are the sole responsibility of the author.

Abbreviations

BMC Seleucids = Gardner 1878

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III. A MINT OF ANTIOCHUS IX AT SAMARIA-SEBASTE?

ARTHUR HOUGHTON

Evidence now points to a reasonable, if not absolutely certain, mint location for a set of previously unassigned small silver coins with the portrait and reverse type of Antiochus IX Cyzicenus who, during the

course of his bitter fight with his half-brother Antiochus VIII Grypus for the Seleucid throne between 114 and 95 BC, ruled at various times and locations in Cilicia, Syria Seleucis, Coele-Syria, and Phoenicia, including the area that the Romans later called Palestine.¹⁸ The coins in question consist of Attic-weight issues, as follows

Hemidrachms

Obv.: Diademed, bearded head of Antiochus IX r.; dotted border.

Rev.: **ΒΑΣΙΛΕ** on r.; **ΑΝΤΙ ΦΙΛ** or **ΑΝ ΦΙΛ** on l.; Athena standing l., holding a Nike in her right hand, cradling a spear within her left arm and resting her left hand on a shield; dotted border.

Obols

Obv.: As above

Rev.: **ΒΑΣΙ** on r.; **ΑΝ ΦΙ** on l.; type as above.

The coins have no dates, symbols or control marks of any kind (see Plate 20).¹⁹

An obol of the series was first published by G. Macdonald in 1912; two more appeared at sales in 1925 and 1996 (Macdonald 1912:89; Naville 10, 15 Jun 1925:1480; Baldwin 7, 1996:no. 217). No hemidrachms of the series were published until the appearance in 1998 of the Arnold Spaer collection, which included three, along with two more obols (Houghton and Spaer 1998:nos. 2760–2764). There are other coins of the series: the author is personally aware of the existence of six hemidrachms and at least sixteen obols, most of which have appeared in the past decade. Surprisingly, the series seems to have included no tetradrachms or drachms—at least, none have yet come to light. No bronze coinage can be associated with the silver.

Without marks that could associate the coins with a particular location, it would normally be difficult to attribute them to any of Cyzicus's known mints or cities of occupation. However, virtually all coins

¹⁸ For a discussion of the periods and locations of Cyzicus's rule, see Houghton (1993).

¹⁹ The illustrated coins are in the author's collection, inv. AHNS 541 (hemidrachm) and 842.2 (obol).

of the series whose provenances are known were acquired in Sebaste—ancient Samaria—or are reported to have been found in or near Samaria-Sebaste by highly reliable sources in the trade.²⁰ With the exception of an obol in the Spaer collection that was acquired in Jerusalem, none are reported to have been originally found elsewhere in Israel or Palestine, or to the knowledge of this author, Lebanon or Syria. The area of diffusion appears to have been quite limited. The available evidence—the absence of links to known mints, the disparate character of the series, and now the relatively small area of findspot distribution—points to the region of Samaria as the locus of origin, and likely to Samaria-Sebaste itself as the issuing mint.

As many readers will be aware, Samaria was a fortress city with a long history of settlement.²¹ Founded by Omri early in the ninth century as Israel's capital, it fell to the Assyrians in 721 BC. Occupied by the Persians in the fifth century, Samaria was seized in 332 BC by Alexander the Great, who settled large numbers of his veterans there. After Alexander's death, the city fell under the control of the Ptolemies, who in 200 BC were driven out by the Seleucid ruler Antiochus III. The city remained Seleucid until it was seized and destroyed by John Hyrcanus I (ruled 135–104 BC) in late 109 or early 108.²² It was annexed to the Roman province of Syria by Pompey in 63 BC and six years later, in 57, was rebuilt by Aulus Gabinius. In 25 BC Herod refounded the city and named it Sebaste in honor of Augustus.

The coinage, and its apparent origin, are surprising. Under the Seleucids, small silver coinage—drachms and fractions—was struck at various times and places, but toward the end of the second century the issuance of such currency had become increasingly unusual and limited to truly major mints such as Damascus (drachms, rarely) and Antioch, which issued, along with its tetradrachms, drachms along with some hemidrachms and diobols. Other than those that are here attributed

²⁰ With thanks to Shraga Qedar and Arnold Spaer for the sourcing information.

²¹ For a recent history of Samaria, see Stern (1993:1300–1318). The excavation sources are G.A. Reisner et al. (1924) and J.W. Crowfoot et al. (1942). For Samaria's coinage of the Persian period see Y. Meshorer and S. Qedar (1999).

²² G. Finkielsztein (1998:49) revises the dates carried by Reisner (1924) and D. Barag (1992–93:8).

to Samaria, no obols were being produced at any Seleucid mint—and, in fact, none are known to have been struck since the reign of Demetrius I (152–145 BC), when a single issue appeared at an uncertain mint very probably located in Persia (Houghton 1983:no. 1321, from Iran).²³ A mint that produced hemidrachms and obols under the Seleucids in this period is exceptional, and one that produced (as seems to have been the case) *only* fractional silver, is exceptional in the extreme.

With regard to the proposed location of issue, Samaria is not an obvious place to have had a Seleucid silver mint. Early in the second century, the production of Seleucid silver coinage had become increasingly concentrated at provincial capitals or important regional economic centers—Antioch in Syria Seleucis, Tyre and Ake-Ptolemais in Phoenicia, Damascus in Coele-Syria, and so forth. There were exceptions, but these generally involved cities that struck issues of prestige or coinage for exclusively political purpose. Even though Samaria-Sebaste was an important marketplace, its currency needs, major and minor, would normally have been supplied by one of the region's principal mints—likely Ake-Ptolemais, which lay not far away, or Damascus. Why would the Seleucid court then have conferred on Samaria the right to coin silver, particularly silver of such an exceptional nature?

The answer almost certainly lies within the political situation in Syria at the time, including the struggle between Cyzicenus and Grypus, and the specific situation of Samaria itself at the time of the mint's establishment. With regard to the former, Cyzicenus's dated coinage indicates that he occupied Antioch and parts of the Phoenician coast (Sidon in any event) in Seleucid Year 200 (114/3 BC), and took Damascus, and perhaps all of Coele-Syria, the following year (Houghton 1993:96[table]). Samaria may have given itself over to him early, earning a royal favor in the process.

At the same time, the fortress-city was an important outpost of resistance against Hyrcanus I, who controlled Jerusalem and threatened Seleucid rule from the south. Josephus's account and recently published archaeological material confirm that Hyrcanus besieged

²³ Another example of this coinage is in Berlin.

Samaria late in 110 or early 109 (Josephus *Ant.* 13.255, *War* 1.63–66).²⁴ Cyzicenus came to the city's relief, but was defeated by Hyrcanus's sons. Cyzicenus returned with 6000 Ptolemaic soldiers, ravaging Hyrcanus's territory in an apparent attempt to relieve the pressure of Hyrcanus's forces rather than engage them in a direct attack. After much loss of life he eventually withdrew, leaving Samaria's defense to two of his generals, Callimandrus and Epicrates, the first of whom was killed in battle while the second was bribed to concede.

It is not clear from the known history of Samaria when a mint may have been established by Cyzicenus: one suspects before Hyrcanus's siege, but the coins are not dated and there is no external evidence to support this view conclusively. Why he issued such a distinctive, even unique, coinage there is more of a question. As small-value currency, the hemidrachms and obols may have been intended to circulate broadly in the region for political reasons and for the purpose of smaller transactions rather than large-scale commercial or military payments, as would have been the case with tetradrachms. Whatever the circumstance, the mint did not remain open long. If it was established shortly after Cyzicenus's arrival in Coele-Syria, in or about 112 BC, its production would have ended when Hyrcanus overcame Seleucid resistance and overwhelmed and destroyed Samaria in 109 or 108.

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²⁴ Hyrcanus's war against the Samaritans is extensively discussed by Finkielsztein (1998:48–52).

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AN IMITATIVE UNSEALED SEMIS FROM NORTHERN ETRURIA

(PLATE 20)

MICHAEL L. THOMAS*

Excavations at the Etruscan site of Poggio Colla, located 35 kilometers northeast of Florence in the Mugello basin, have unearthed evidence of settlement from as early as the seventh century BC until a final abandonment of the site in the middle of the second century BC. The site was first excavated by an Italian team led by Dr. Francesco Nicosia from 1968 to 1972. In 1995 a team sponsored by Southern Methodist University and the University of Pennsylvania resumed excavation, and after five seasons the American excavations have defined an extensive settlement centered around what seems to have been a hilltop sanctuary.¹ The sanctuary underwent at least three phases of building, the last of which may have been abandoned before completion. Although the site preserves spectacular *bucchero* and a *dromos* tomb typical of the late seventh century BC, the most

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¹ For a preliminary report of the first two seasons see Warden and Kane (1997). For the most recent publications on the site with full bibliography see Warden, Thomas, and Galloway (1999) and Warden and Thomas (1999). The site also has a “semi-live” web site intended for a general audience that has been active since 1996 (www.smu.edu/~poggio) as part of a project initiated by Prof. Sam Carrier, Oberlin College, now continued by Prof. Kathy Windrow, Eastfield College.

complete evidence of architecture and settlement dates from the late sixth to the mid second centuries BC.

Part of the challenge of the excavation has been to date the sanctuary's building phases and to secure a history of the site. To date excavations have identified three distinct phases of a building that dominated the center of the fortified *arx*. The phase I foundations are characterized by ashlar blocks set into bedrock and oriented to the cardinal points. Finds associated with phase I foundations, such as an archaic antefix and the head of a late-archaic votive statuette, point to a destruction of this early phase sometime after the first quarter of the fifth century BC. The architects of phase II utilized similar ashlar foundation blocks, but rotated the building to conform with the natural topography of the hill. The phase III foundations follow the layout of the phase II building but utilize field stones instead of the finely cut blocks of the previous phases.

Fortunately, the discovery of several coins may help define the history of phases II and III. In 1999, two identifiable coins were found: a Campanian bronze coin and an imitation semis, or unofficially minted Roman bronze coin.² The Campanian bronze preserves an image of a helmeted Athena on the obverse and a cock on the reverse. This type is believed to be contemporary with the First Punic War and dates to the middle of the third century BC (Crawford 1985:47–48).³ Imitation coins, such as the Poggio Colla semis, were not produced in official state mints and are somewhat uncommon and extremely difficult to date.⁴ Moreover, these imitation coins have seldom come from secure archaeological contexts. For these reasons they have generally been overlooked by modern scholars.⁵

² Poggio Colla catalogue numbers: Campanian bronze, 99-067; semis, 99-55.

³ Cales, Suessa, Teanum, Aquinum, Caiatia, and possibly Telessia produced this type.

⁴ Contrary to the practice on genuine issues, imitation coins often do not identify the moneyer and usually portray a left-facing obverse head.

⁵ The exceptions are the important works of M. von Bahrfeldt (1934–36) and M. H. Crawford (1982).

The Poggio Colla bronze semis was found in what may be the floor packing of the unfinished phase III of the sanctuary building. This semis is struck, not cast.

Obverse: Laureate head of Saturn, l.; to lower right, reversed S

Reverse: Prow, r.; above, S; below, ROMA

Diameter 24 mm, ↓, 3.96 g.⁶

The Poggio Colla coin is nearly identical to a semis now in the collection of the Kestner Museum in Hannover (Berger 1989:388–389, no. 2789).⁷

The lack of provenience and the variation of quality, types, and weights of unofficial coins make them difficult to date securely.⁸ Crawford suggests that as a phenomenon, they be dated primarily to the first three quarters of the first century BC (Crawford 1982:140); however, the archaeological record at Poggio Colla points to a significantly earlier date for this semis. Since the semis was found in what may be the destruction debris of phase II of the sanctuary building (consolidated during cleaning and packing for the phase III), its presence at Poggio Colla may predate the destruction of phase II, or at least, give a *terminus post quem* for the abandonment of phase III.

The destruction of the phase II sanctuary and of the outlying settlement may have occurred during the campaigns of the consuls M. Aemilius Lepidus and C. Flaminius in 189 BC. This period witnessed the building of a road from Arretium to Bononia, which would have passed very near, or through the Mugello valley.⁹ During the

⁶ The coin was discovered in mineralized and fragmentary condition and was restored by Poggio Colla conservator Ellen Salzman. According to the conservator's report "it is unlikely that [3.96 grams] is an accurate reflection of the original weight. A portion of the coin is missing and the loss has been filled, as discussed above. Even taking these two elements into account, however, the mineralization of the coin makes the maintenance of weight improbable. In all likelihood the coin originally was quite a bit heavier."

⁷ The coins have identical diameters; however, the Hannover version weighs 11.07 grams. A comparison by photographs suggests that the two coins likely came from the same obverse and reverse dies, but further study is required.

⁸ For example, the Hannover coin is categorized in a large group of coins dated to the second and first centuries BC (Berger 1989:382).

⁹ These campaigns also may have led to the destruction of the nearby site of Monte Bibele (Gottarelli 1989). It is also possible, but less likely, that the end of

campaigns the consuls attempted an extensive pacification of the entire area north and south of the Apennines which led to the transfer of populations from hilltop settlements to the more controllable valleys below (Livy 39.2).¹⁰ Such a transfer of population seems to have occurred at Poggio Colla, where the settlement surrounding the sanctuary was destroyed and later Roman activity appears to be limited to the valley.

While the destruction of phase II may have occurred in the first two decades of the second century BC, the initial study of the ceramic evidence at Poggio Colla suggests that the sanctuary was abandoned (during the phase III rebuilding) as early as 150 BC.¹¹ Thus, the Poggio Colla imitative semis was likely struck at some point between 211 BC (the probable date for official weight changes) and 150 BC. Although further study and excavation will hopefully present a more thorough chronology of the site, even at this early stage, the excavation at Poggio Colla has already presented a much needed archaeological context for an unofficial semis.

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phase II at Poggio Colla may have come at the hands of rival Etruscan centers or Gallic or Ligurian incursion. The discovery of the semis excludes the possibility that this destruction resulted from the army of Hannibal that passed near the area in 217.

¹⁰ Livy is not clear about how far east these pacifications extended.

¹¹ The ceramic assemblage from Poggio Colla is similar to that from Monte Bibele (Vitali 1990).

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THE EARLY GOLD COINAGE OF TRAJAN'S SIXTH CONSULSHIP

(PLATES 21–26)

MARTIN BECKMANN*

INTRODUCTION AND CHRONOLOGICAL BACKGROUND

This study attempts to establish a firm chronology for the early coins of Trajan's sixth consulship, from January 112 to the fall of 114. These three years saw a number of significant events relating to Trajan's reign. Perhaps the three most significant were the dedication of Trajan's massive new forum complex early in January 112,¹ the death and deification of Marciana and the elevation of Matidia to the rank of Augusta in August of the same year,² and the departure of Trajan for the East at the outbreak of the Parthian war in the fall of 113.³ All of these events had impacts on the imperial coinage.

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¹ *Fasti Ostienses* (Calza 1932:196 ll.34-35) AD 112, "... k. ia]nuar. Imp. Traianus forum suum et [Bas]ilicam Ulpiam dedicavit."

² *Fasti Ostienses* (Calza 1932:198 ll.39-40): "III k. septembr. [Marciana Augu]sta excessit divaq. cognominata" and l.41: "[eodem die? Matid]ia Augusta cognominata."

³ No firm date for this is available in the Roman sources, but Dio (68.17.1) indicates that it occurred after the dedication of the forum and column of Trajan (January 112 and early 113 respectively) and before the award of the title *Optimus* (fall 114?). A fragment attributed to Arrian's *Parthica* and preserved in the *Suda* (see Jacoby 2.D.575) appears to record the departure of Trajan on the sixteenth anniversary of his adoption by Nerva (=October 27, 113).

Trajan became consul for the sixth time on January 1, 112, his last tenure of the consular office. The coinage of Trajan's sixth consulship can be subdivided into three main periods, based on additional titles which Trajan was awarded between 112 and his death in 117: *Optimus* and *Parthicus*. The period I will deal with here is bounded by the appearance of **COS VI** in 112 and the addition of *Optimus* to his titulature in 114/115. The exact date of the award of the title *Optimus* has been debated, with Strack favouring a date late in 114 and Mattingly more inclined to a date in early 115 (Strack 1931:35; *BMC* III: lxi-lxii, although in the chart on p. liii it is assigned to 114).⁴ Strack follows the evidence of a military diploma (CIL III, p. 869) which dates to shortly before September 1, 114, and names Trajan as *Optimus*, along with the Alexandrian coinage of the local year 18, dating August 29, 114, to August 28, 115, which bears the title **ΑΡΙΣΤΟΣ**, the Greek equivalent of *Optimus*. Mattingly was inclined to discount the evidence of the diploma, noting that the title *Optimus* may have been applied retroactively, and he also preferred to take the Alexandrian evidence as favouring a date in 115 rather than 114. The Alexandrian mint did produce a very limited number of coins of year 18 without the title *Optimus* (e.g., Milne 711 and 712), which suggests that the title made its appearance early in year 18. Further support comes from two Egyptian ostraka which, as interpreted by T. Frankfort, suggest a date between August 10 and September 1 for the award of the title at Rome (Frankfort 1957).⁵ I am thus inclined to follow Strack and most others in dating the assumption of *Optimus* to late 114.

Within this period of almost three years (January 1, 112, to late 114), there are no further epigraphic aids to help us date the coinage.

⁴ Hill (1970:44) made a further argument based on his (and Mattingly's) proposition that the Jupiter Conservator coin type (which appears both without and with *Optimus*) commemorates Trajan's miraculous escape from an earthquake in Antioch in early 115, but this must be discounted since die links show this type must be earlier.

⁵ The ostraka, from Syene (Aswan), are dated September 30, year 18, and November 24, year 18. Only the latter bears the title Ἀριστος. Using the Carnuntum diploma as a *terminus ante quem* (September 1), she calculates a *terminus post quem* by subtracting a 30–50 day period (for the news of the *Optimus* title to travel from Rome) from the date of the first ostrakon.

In the absence of such clues as tribunician dates, scholars have tried various other methods to arrange the pre-Optimus COS VI coinage into a chronological sequence.

THE TYPES AND PREVIOUS ATTEMPTS AT DATING

Fifteen reverse types were employed during the period under study here, and range from common to unique in rarity. They are listed here followed, in parentheses, by their abbreviations (used to identify the types in charts and lists) and the number of reverse dies known. The two most common typological groups of coins are those employing architectural themes and those showing gods. The former include the Forum of Trajan (*F*, 10 dies), the Basilica Ulpia (*B*, 5 dies), the Column of Trajan (*C*, 4 dies), and the Via Traiana (*V*, 2 dies). The latter group of types includes Jupiter Conservator (*J*, 10 dies), Bonus Eventus (*BE*, or *BEA* with an altar beside the naked god, 10 and 3 dies respectively), Fortuna Redux (*FR*, 2 dies), and Mars Victor (*M*, 1 die). Two types show deceased relatives of Trajan: the deified father of Trajan, labelled **PATER TRAIANVS** (*P*, 7 dies), and the facing busts of both Nerva and Pater Traianus (*N*, 6 dies). Two further types show objects: one depicts two military standards flanking a legionary eagle (*S*, 9 dies), while another unique type appears to depict a statue of the emperor on horseback, possibly the famous Equus Traianus which stood in the center of Trajan's Forum (*ET*, 1 die).⁶ Finally, two rare types depict events: a *profectio* of the emperor (*PR*, 1 die) and a crowning ceremony for a Parthian king, labeled **REX PARTHVS** (*RP*, 1 die).

There have been three major attempts made at arranging the reverse types of Trajan's early sixth consulship into chronological order of issue. The earliest was that of Strack; Mattingly's was made soon after. The most recent attempt was made by Hill, in his 1970 publication. These are summarized in the following chart, which employs the abbreviations noted above. The reverse types are listed with the same abbreviations as used in the catalogue and placed in

⁶ See Packer (1997:95–96) for previous research on this coin type.

Figure 1. Previous dating attempts for early types of Trajan's sixth consulship

Date	112		113		114		115
Strack	-P,N,V-	-F,B,C-			-PR,FR,J,S,BE,BEA,M-		
Mattingly		-FR,V-	-S,BE,BEA,C-F,B,PR,M,RP-				-J-
Hill			-S,V,BEA-		-FR,BE,C,M-		-B,F,J,P,N-

the chronological sequence (indicated by the timeline at the top of the chart) favored by each of the authors listed on the left. A dash (or more than one dash) between types indicates that the types follow each other in chronological order; a comma indicates that the types are contemporary.

Strack's approach to constructing a chronology for these issues was the most simple and straightforward of the three, and was based largely on an attempt to connect the various types to specific historical events of the period. In brief, three main groupings of coins are evident in the chart, for which Strack proposed the following historical associations: the death of Trajan's father (for which he suggested a date of 112), the dedication of Trajan's forum complex (which he placed in December 112), and the outbreak of the Parthian war (which he placed in October 113). It has since become clear that some of Strack's historical assumptions are incorrect, such as his theory that Trajan Senior died in 112, refuted by Mattingly (Strack 1931:200; *BMC* III:lxvxi), and his incorrect date for the dedication of the forum, now known from the *Fasti Ostienses* to have occurred in January 112. In general, however, his ideas have formed the basis for a number of modern interpretations of the coinage—for example, Packer's reconstruction of the forum complex (Packer 1997).

The next attempt at creating a chronology for these coins was made by Mattingly in his publication of the British Museum collection. Mattingly began his construction of a chronology for Trajan's **COS VI** issues by breaking the coins down by obverse and reverse legends. The main criteria for his divisions of the coinage of this period were, of course, the presence or absence of the titles *Optimus* and *Parthicus*; however, he proceeded to subdivide these categories into smaller

groups. For the pre-Optimus coinage, Mattingly divided the issues into two main groups based on legends, as follows:

- a) Obv: IMP TRAIANO AVG GER DAC P M TR P COS VI PP
Rev: S P Q R OPTIMO PRINCIPI
- b) Obv: IMP TRAIANVS/O AVG GER DAC P M TR P COS VI PP
Rev: various descriptive reverses

He then proposed that these two groups may overlap, "but (b) seems likely to be later, on the whole, than (a)" (*BMC* III:lx). This arrangement was made largely on the basis of the Profectio Aug. and Rex Parthus types, which he associated logically with the Parthian campaign beginning in late 113 and which fall into group (b). The much more numerous Conservator Patris Patriae type, which he associated with Trajan's miraculous escape from an earthquake at Antioch⁷ and which also fits into group (b), was taken to reinforce this chronology. Mattingly also found reason to associate the reverses showing Trajan's father with the new Parthian war by suggesting that the Senate may have chosen to honour him with deification on this occasion due to his own successes against the same enemy in 77 (*BMC* III:lxxx). The forum and basilica types he also placed into his late group on the mistaken belief that the forum was dedicated in 113 (*BMC* III:lxxx–lxxx).

Hill's chronology owes much to Mattingly, but he introduced the additional concept of annual "substantive issues" by the Roman mint, which he attempted to identify based on estimations of rarity (substantive issues are taken as being of the most common types) and common reverse inscriptions (Hill 1970:40). These substantive issues, he proposed, were the standard fare of the mint, displaced only by special types to commemorate important and unexpected events. Once these substantive types were identified, he attempted to group them based on his interpretation of their possible historical associations. Thus he saw the coinage of 112 as being taken up mainly by issues commemorating the death and consecration of Marciana and the elevation of

⁷ As recorded by Dio (68.25.5), who relates that Trajan was saved by a large, supernatural being. No mention is made of any particular deity.

Matidia to the rank of Augusta, until a return to substantive issues with types showing standards and the Via Traiana in 113 (Hill 1970:143–144).⁸ The Genius with Altar and Profectio types he placed in the same year, associating them with the departure of Trajan for the Parthian war. All the types of 114 he took as substantive, while the bulk of the types of 115 he associated with Trajan's *vicennalia* celebration, with types designed to celebrate the achievements of the emperor (Hill 1970:42–43, 144–145).

THE DIE STUDY

In an attempt to establish a firmer chronology for this series of coins, a die study of the gold coinage was made. Gold was chosen since it originally constituted a smaller issue than the silver or bronze coinage, and since it has generally been much better published. A corpus of 256 coins was assembled from the ANS collection, other major public collections, and sale catalogues. A total of 82 obverse and 77 reverse dies were identified. It was found that three groups of reverse types could be defined through links with common obverse dies. The die study is catalogued at the end of this paper, where also can be found the full die-link charts. The three groups are as follows.

Group 1

Obverse: IMP TRAIANO AVG GER DAC P M TR P COS VI P P

Reverses: Via Traiana (V), Equus Traianus (ET)

Obverse: IMP TRAIANOVS AVG GER DAC P M TR P COS VI P P

Reverses: Basilica Ulpia (B), Forum Traianum (F)

Obverse: IMP TRAIANVS AVG GER DAC P M TR P COS VI P P⁹

Reverses: Divus Pater Traianus (P), Divi Nerva et Traianus Pater (N), Mars Victor (M)

⁸ With these gold types he associates their corresponding silver types and the Equus Traiani silver.

⁹ There is one exception: die N6 is linked to obverse a20, which employs the dative case for the emperor's name.

Group 2

Obverse: IMP TRAIANO AVG GER DAC P M TR P COS VI P P

Reverses: Conservator Patris Patriae (J), Eagle and Standards (S),
Bonus Eventus (BE), Trajan's Column (C), Fortuna Redux (FR)

Group 3

Obverse: IMP TRAIANO AVG GER DAC P M TR P COS VI P P

Reverses: Bonus Eventus with Altar (BEA), Fortuna Redux (FR),
Conservator Patris Patriae (J), Profectio Augusti (PR)

There are no die links between any of these groups, and Group 1 shares no types with Group 2 or Group 3. Group 3 is distinguished from Group 2 by the Bonus Eventus with Altar type, which appears to form a distinct die-linked unit.

SEQUENCE OF GROUPS

Group 1 is almost certainly to be placed first in chronological order. This rests on two observations. First, the Via Traiana type is one which carries over from COS V coinage. Second, the Forum and Basilica are known (as detailed above) to have been dedicated in January 112, the same month in which Trajan entered his sixth consulship.

Groups 2 and 3 are characterized by a sweeping and total change in reverse types. None of these new types have any obverse dies in common with the preceding group. The clearest argument that this group postdates Group 1 also involves the survival of types. Group 1 contains no types which continue on later Trajanic issues; both Group 2 and Group 3 contain types which do. Jupiter Conservator, Bonus Eventus sacrificing (with no altar), Fortuna Redux, and Profectio Augusti all appear as types on COS VI issues using the title *Optimus* on the obverse, which immediately follow the series studied here. Since these later issues are distinguishable from the earlier only by

their inscriptions (COS VI P P S P Q R replaces S P Q R OPTIMO PRINCIPI on the reverse), they should most likely be seen as part of the same sequence.¹⁰

The date at which Groups 2 and 3 replaced Group 1 is impossible to state with certainty. However, judging by the nature of these new types, it appears reasonable to associate them with the outbreak of the Parthian war and Trajan's departure for the East late in 113 (see Longden 1931:1). This new series then endured until August(?) of 114, at which time Trajan was awarded the title *Optimus* and a partial change in reverse types occurred.

It is not clear which (if either) of the two distinct die-linked groups in this new series of 113/114 (Group 2 or 3) came first. That Group 3 may be earlier than Group 2 is suggested by its die-linkage to the *Profectio* type, which clearly refers to a departure of the emperor from the capital. The other types linked to that of the *Profectio* also show associations with the departure of the emperor and the dangers of a new war. The Fortuna Redux type can be seen as appealing for the emperor's safe return, while the Jupiter Conservator type stresses the divine protection of the emperor during his absence.

CHRONOLOGY AND INTERPRETATION OF TYPES

Group 1

Only within Group 1 is it possible to establish by die links a chronological sequence for the types. While the sequence is by no means perfectly linear, it does have a rough order. What is more, the sequence can be divided into two sections based on the case (dative or nominative) used for the name of Trajan in the obverse legend. This can be seen in the die-link chart, where obverse dies using the

¹⁰ A search was made for accidental combinations of *Optimus* reverses with pre-*Optimus* obverses, or vice-versa, which could have confirmed this sequence, but none were found. An apparent such instance, lot 1221 in the Leu and Münzen und Medaillen sale of the Niggeler collection (2-3 Nov. 1967) turned out on closer examination to be the result of an error in the catalogue plates, with one obverse photo printed for two coins!

dative case have been underlined (e.g., a29), while those using the nominative have not. The case of the obverse legend on the gold dating to the later part of Trajan's fifth consulship and to the short COS V DES VI period was, as best as can be determined in this difficult-to-date series, entirely dative.¹¹ It is logical to conclude that this usage was carried over onto the coinage of early 112.¹² It is clear from the die links that the nominative case appeared at the same time as the new *P* and *N* types. This switch, I believe, is to be explained by the fact that the new reverses used (for whatever reason) the names of Trajan Senior and Nerva in the nominative; the die engravers thus were inspired (or ordered) to change the case of the obverse legend also to the nominative. The switch back to the dative, which occurred abruptly and thoroughly with the total change in coin types in the fall of 113 (see below), was apparently due to the reintroduction of the reverse legend *S P Q R OPTIMO PRINCIPI*. With Trajan thus referred to in the dative on the reverse, it was deemed suitable (or necessary) also to change the case of the obverse to match.

Further evidence to support beginning the Group 1 sequence with the dative case obverses comes from the *Via Traiana* type. As mentioned above, this type was continued from Trajan's COS V coinage. It also employs exclusively the dative case on its obverse dies.

The dating of the major development in Group 1, the introduction of the new types showing the deified Trajan Senior alone or with the deified Nerva, is difficult to pinpoint. Pliny referred to Trajan Senior as dead and almost deified ("si non sidera, proximam tamen sideribus obtines sedem" *Panegyric* 89.2) in the panegyric he delivered as consul in 100, but no other source sheds light on his actual deification. Mattingly (after discounting Strack's suggestion that Trajan Senior did not actually die till 112) suggested that his deification might have been

¹¹ For the dating of late fifth consulship issues (types including Jupiter enthroned, Libertas, Abundantia, Arabia, and Alimenta) see Allen (1997). For coins of COS V DES VI, *BMC* III:411–414.

¹² Another example of this tendency can be seen in the early coinage of Hadrian, which began by using the dative case (carrying over, apparently, from the reign of Trajan), but then in COS II switched to the nominative and retained this case to the end of Hadrian's reign.

voted by the Senate on the occasion of Trajan's departure for the East in autumn 113 (*BMC* III:lxxxi).¹³ The die-linked series, however, appear to rule this out completely, since none of the military types of Groups 2 or 3 link to the types showing Trajan Senior.

It may be possible to obtain a rough date for the introduction of types *P* and *N* through an examination of the volume of the coinage, although this assumes that the rate of gold coin production remained steady and constant throughout the period (a big assumption). If the die sequence is roughly divided at the introduction of types *P* and *N*,¹⁴ the latter series can be seen to account for more than half, perhaps as much as two thirds, of the total volume. The period of Group 1's issue, between January 112 (Trajan's sixth consulship) and fall 113 (Trajan's departure for the East), lasted approximately 20 months. Thus, following this argument, the introduction of types *P* and *N* could be placed between summer and mid-autumn of 112.

There are two events within this period which might have occasioned the deification of Trajan Senior and the issue of coins commemorating this event. The first is the death, deification, and subsequent numismatic commemoration of Marciana, sister of Trajan, which occurred in late August 112.¹⁵ This still leaves the interesting question of why the deification of Marciana is the only one recorded in the *Fasti*, even though the deified Trajan Senior is much more heavily commemorated on the coins. The second possible occasion is the fifteenth anniversary of the adoption of Trajan by Nerva, which fell in late October 112. Which, if either, of these suggestions is correct is impossible to tell. Both events fit into the date range suggested by the relative proportions of dies in Group 1, although the death of Marciana may provide a better fit than the anniversary of Trajan's adoption. Because of the prominent place given the death of Marciana in the

¹³ In support of this Mattingly notes Trajan Senior's success against the Persians in 77, and suggests this may have made him a suitable candidate for deification on the occasion of his son's departure to fight the same enemy.

¹⁴ It is difficult to be totally precise in this matter, since the Forum and, to some extent, the Basilica types continue for some time along with the new types *P* and *N*.

¹⁵ For the date, see above, n.3. For coins commemorating Diva Marciana, see *BMC* III:647-655, all rare.

Fasti, I am inclined to favor this as the most likely event to inspire the deification of Trajan Senior, who was, of course, not only Trajan's father but Marciana's too. The deification of Trajan Senior may have been omitted from the *Fasti* because he was already thought of as a god, or nearly so (as by Pliny over a decade earlier).

This entire theory is challenged, however, by the strange case of die N6, which links to obverse die a20, apparently relatively early in the dative-obverse series. This die is known from only one coin, and is clearly different in style from the rest of the *N*-series dies. Moreover, it also shows the heads of Nerva and Trajan Senior reversed, compared to their position on the other *N* dies. A possible explanation is that die N6 represents the first die of the *N* die series, and even perhaps that it was a trial die. The pairing of N6 with a dative-obverse die may mean only that this obverse die was still lying about, along with many others, and was chosen at random to strike the new type. The frequent multiple (and often extended) links from individual obverse dies in this study do not indicate that a strict sequence of manufacture-use-breakage-replacement was followed for obverse dies.

The introduction of new types *N* and *P* did not mean the end of the old ones. From the die links it appears that the Forum type carried on strongly, perhaps to the end of the entire series, although the Basilica Ulpia type saw much less use after the new Trajan Senior types were introduced. The Via Traiana type seems to have gone out of use before the new types *P* and *N* appeared. The last new type to be introduced in the series was the Mars Victor type, which seems to have been struck (from only one die, as far as can be determined) at the very end, perhaps as late as summer 113.

Groups 2 and 3

As noted above, the die-link charts of Groups 2 and 3 do not provide any obvious opportunities for clarifying their internal chronology. However, there remain some problems of identification and interpretation of some of the types.

The sacrificing figure type has caused major problems in identification. Strack (1931:217) identified him as Bonus Eventus, citing in support a passage from Pliny the Elder describing a statue of the god

at Rome (*NH* 34.19.77).¹⁶ Mattingly (*BMC* III:lxix)¹⁷ and, following him, Hill (1970:143) preferred an identification as *Genius Augusti* or *Genius Populi Romani*. Comparison with similar types of earlier emperors makes it clear that *Bonus Eventus* is the proper identification of this figure. Galba struck coins labeled **BON EVENT** showing a naked figure standing left and holding a patera, corn ears, and poppy.¹⁸ Titus struck coins with the legend **BONVS EVENTVS AVGVSTI** and a similar figure (*BMC* I:79–80). Finally, Vespasian struck both coins with a naked figure very similar to those on the coins of Trajan with the legend **PACIS EVENTVM** and coins with a semi-draped male figure holding patera and cornucopia with the legend **GENIVM P R**.¹⁹ This type on coins of Groups 2 and 3 should thus likely be taken as an appeal for a good outcome to the new and risky venture on which the emperor had embarked.

The other major divine type in this group, *Jupiter Conservator*, is clearly depicted and labeled on the coins in his role as protector of the *pater patriae*. The occasion for this issue, however, has been debated. Strack placed it with the issues connected to the *profectio* of Trajan, linking it to vows made for the emperor's safety (Strack 1931:216). Both Mattingly and Hill, noting the novelty of the type, preferred to associate it with a similarly novel event: the earthquake at Antioch in early 115, from which Dio says that Trajan escaped with help from a large, supernatural figure (*BMC* III:lxixii; Hill 1970:43).²⁰ Die links show that this type appeared at the same time as the other new types associated with Trajan's departure from Rome, and I thus favor this event as the appropriate one to associate with the type.

A rarer type also makes its appearance in Group 3: Trajan's Column. The column does not seem to have been dedicated along with the rest

¹⁶ "simulacrum Boni Eventus, dextra pateram, sinistra spicam ac papavera tenens."

¹⁷ Mattingly appears to follow Strack (1931:176) for his identification of this type, but Strack in this case was referring only to the semi-draped *Genius* with cornucopia on **COS V** coinage.

¹⁸ *RIC* II:104, not in BM, but an example from Vienna illustrated as a cast on pl.54.1 of *BMC* I.

¹⁹ *BMC* II:421–422, 417–418. These are conveniently illustrated on pl.14.

²⁰ For the quake, Dio 68.24–25, discussed at length in Longden (1931).

of the forum, and indeed there is evidence to place this event early in 113. The first is the inscription on the base of the column itself, which gives Trajan's titulature as it was between January 112 and September(?) 114.²¹ The second piece of evidence comes from an unfortunately damaged fragment of the *Fasti Ostienses*, which records a dedication in May 113 by Trajan in his forum of some monument which ends with the letter "m".²² This word was restored by Calza as "columnam", and this restoration has been followed by most scholars since. However, if the interpretation of the coins of Groups 2 and 3 as set out above is correct, the Column coins in Group 3 cannot be seen as immediate commemorations of this event, since they did not begin to be issued until five months later than the supposed dedication date, at the earliest. This, at least, is the conclusion reached from the limited evidence of one die-linked Column reverse (C1); it is of course possible that other dies and links await discovery. That the *Fasti* do indeed refer to the column is debatable, not least because we have only one letter of the named monument surviving, a letter which would be suitable for most Latin nouns in the accusative singular. In sum, all that can be said with certainty of the gold coins of the Column type is that they are not contemporary with the Forum and Basilica types.

SUMMARY

The chart summarizing the dating attempts of Strack, Mattingly, and Hill is reproduced in Figure 2, followed by the suggested new chronology. As above, the reverse types are listed with the same abbreviations used in the catalogue and placed in the chronological sequence (indicated by the timeline at the top of the chart) favored by each of the authors listed on the left. A dash (or more than one dash) between types indicates that the types follow each other in chronological order; a comma indicates that the types are contemporary.

²¹ *CIL* 6.960: Senatus Populusque Romanus / Imp. Caesari divi Nervae f. Nervae / Traiano Aug. Germ. Dacico Pontif. / Maximo Trib. Pot. XVII Imp. VI Cos. VI P. P. / ad declarandum quantae altitudinis / mons et locus tan[tis ope]ribus sit egestus.

²² *Fasti Ostienses* (Calza 1932:201 ll. 53–56) AD 113, "id. Mai. Imp. Traianus [templum Ven]eris in foro Caesaris et [...? columna]m in foro suo dedicavit."

Figure 2. Summary of dating attempts, with suggested new chronology

Date	112	113	114	115
Strack	-P,N,V- -F,B,C-	-PR,FR,J,S,BE,BEA,M-		
Mattingly	-FR,V- -S,BE,BEA,C-F,B,PR,M,RP-			-J-
Hill		-S,V,BEA-	-FR,BE,C,M-	-B,F,J,P,N-
suggested	-B,V,ET,F-P,N	M-	-PR,FR,J,BEA-/ /-J,BE,S,C—Optimus (fall 114) (J, BE, and PR continue)	

The suggested new chronology places the Basilica, Via Traiana, Equus Traianus, and Forum types first in the sequence, with Pater Traianus and Nerva and Pater Traianus types appearing after some months, and Mars Victor appearing at the end of this die-linked sequence. A total break occurred late in 113, when all old types were discontinued and a new group of types (Profectio, Fortuna Redux, Jupiter Conservator, and Bonus Eventus with Altar) appeared in a die-linked sequence. The types listed below this group (including the new types Bonus Eventus [without altar], Standards, and Column of Trajan) form another group of die-linked types distinct from the die-linked group *PR/FR/J/BEA* and likely somewhat later in date. This later series of types ended in the fall of 114, when **OPTIMVS** was added to Trajan's obverse titulature and another partial change in coin types occurred. However, some of the existing types did continue in the new Optimus coinage: *J*, *BE*, and *PR*.

This chart clearly shows that, with a number of exceptions, Strack succeeded in coming closest to the groupings of coins suggested by the die study. All three scholars employed historical parallels to aid in dating the types, but both Mattingly and Hill only did so after first imposing certain extra frameworks. Mattingly used groupings based on obverse and reverse legends, but die study reveals that these groupings are generally invalid. Not only do descriptive reverses and reverses with the legend **S P Q R OPTIMO PRINCIPI** coexist, but it seems that while Mattingly was on the right track in distinguishing the nominative and dative obverse legends, he placed them in the wrong order. Hill erred to a greater degree as a result of the restrictions imposed by his theory of yearly "substantive" issues.

CONCLUSIONS

This die study of the gold coinage of Trajan's early sixth consulship allows some observations to be made concerning the coin production process at the Roman mint in this period. The first of these involves the choice of types. If the dates as suggested above are correct (and in most cases the correspondence between historical events and numismatic considerations such as coinage volume suggests that they are), it appears that the Roman mint chose types which were closely related to current events. If the event was significant enough, such as the outbreak of the Parthian war, it could occasion a total change in the types of the coinage—for the gold at least.

Here I run some risk of getting caught in a circular argument: using historical events to propose dates for types, and then using these type dates as evidence of close correspondence between event and type choice. Die links, however, have verified at least some of the broad groupings of types which earlier scholars, particularly Strack, had suggested on the basis of historical association. This emphasizes the importance of contemporary events on coin type selection, and unless evidence can be found to indicate otherwise, I believe it is valid to suppose that new types would have been created close to the time of the events thus commemorated.

It is interesting to note that obverse dies outnumber reverse dies. This feature of the coinage is difficult to explain. It is possible that obverse dies were more carefully scrutinized for die wear than reverse dies,²³ and it is also possible that obverse dies tended to wear out faster because of their much deeper relief. It is even more difficult to explain the apparent fact that some reverse dies are linked to many obverses (for example, N2 links to six obverses, while B3 and G1 each link to five) while others link to only one or two. This may be partially due to the non-survival of coins which might show other die links, but the charts (especially for Group 1) appear to show a relatively complete sequence. It may also be a result of different rates of survival

²³ In this study I have noted no sign of die wear on any obverses. On reverse dies, I have found only one clear case of progressive die wear—see the three coins of die combination VIII.15 in the catalogue.

of dies in the mint or of a less-than-rigid control of which dies were to be used at any given time (compare the case of reverse die N6, discussed above).

The numbers of dies identified for each type may also be worth noting. Three types (*F*, *J*, *BE*) have exactly ten dies, while *S* has nine. Types *B*, *P*, *N*, *BEA*, *C*, and *FR* have from three to seven known dies, *V* has two, and the remaining four types (*M*, *PR*, *RP*, *ET*) have only one die each. Certainly not all dies are represented by the coins in this study, but the incidence of three types with exactly ten dies each may be of some significance.

CATALOGUE

The catalogue is arranged by reverse types, identified by an upper-case Roman numeral (e.g., II); one type, IV, is further subdivided into two groups (IVa and IVb) based on a small difference in the reverse legend. Die combinations are numbered sequentially at the far left. Each die combination entry includes the identification of the obverse die (in italics if it links to reverse dies of another type), followed by individual reverse dies identified by an uppercase letter (e.g., F for dies of the Trajan's Forum type) and a sequential number. Individual examples of coins from any one pair of dies are identified by a lower-case letter followed by the specific reference for that coin.

All obverse and reverse dies are illustrated in the plates. To identify which coins the reverse die illustrations are taken from, an asterisk (*) is placed beside the relevant catalogue entry. Thus, to find in the catalogue the coin from which the die C2 illustration is taken, simply refer to the appropriate section of the catalogue and find the asterisked C2 entry. Since the obverse dies are not listed in the catalogue in order, a separate index has been provided at the end of the catalogue to allow readers to match the illustrations to catalogue entries.

In the matter of illustrations, I would like especially to thank W. Metcalf for allowing me access to the ANS collections, and S. Suchma for making photos of the ANS coins, in addition to providing me with much assistance with the scanning of images from auction catalogues and file cards. I also thank R. Abdy for sending photos of British

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Abbreviations of Hoards and Collections

ANS = American Numismatic Society collection.

Belloni = Belloni 1973.

BNF = Bibliothèque Nationale de France.

Braga = Centeno 1978.

BRB = Cabinet des Médailles of the Bibliothèque Royale, Brussels.

Brigetio = Barkóczi and Biro-Sey 1963-64.

Corbridge = Craster 1912.

Didcot = Bland and Orna-Ornstein 1997.

Erla = Jungwirth 1967.

Gnecchi = Gnecchi 1914.

Hunter = Robertson 1971.

Liberchies = Thirion 1972.

Via Po = Cesano 1929.

Villach = *FRMÖ* II/3, B:35-41.

Obverses:

IMP TRAIANVS/O AVG GER DAC P M TR P COS VI P P. The case of Trajan's name is indicated by underlining if dative (e.g., a16); no underline (e.g., a9) indicates that the case is nominative. Obverse dies in italics (e.g., *a2*) indicate dies which link to other reverse types; to find the exact links, consult the index of linked reverses. The obverse types are listed below in increasing order of rarity.

- a. Bust of Trajan laur., r., dr. and cuir.
- b. Bust laur., r., dr. with clasp on shoulder and cuir.
- c. Bust laur., r., dr.
- d. Bust laur., r., dr. and cuir., with small globe beneath (quite rare).
- e. Bust laur., r., bare except for aegis at front (only one example).

I. Trajan's Forum (F)

Reverse: **FORVM TRAIAN** (in ex.). Facade with sculpture.

1. *a12* F1

- a. Brigetio 51 (pl. 1).
- b. Lanz 72, 29 May 1995, 578 = Santamaria, 13 Mar. 1953, 33 = Helbing 70, 9 Dec. 1932, 73.

2. *a13* F1

- a. Superior Stamp and Coin, 3-5 Oct. 1977, 1294.
- b. Vinchon, 6-7 May 1955, 326 = Baranowski, 25 Feb. 1931, 1692 = Ratto, 12 May 1925, 1058

3. *a14* F1

- a. Vitalini, 9 Mar. 1891, 18.

3a. *a15* F1

- *a. BNF FG 519.

4. *a13* F2

- *a. BMC 509.

5. *a13* F3

- a. Erla 476.
- b. G. Hirsch, 26 Apr. 1954, 356 = Hess, 9 May 1951, 94.
- c. Bourgey, 18 Dec. 1912, 127 = Sotheby, 4 May 1908, 270.

6. *a14* F3

- *a. Vinchon, 23-24 Apr. 1976, 226.
- b. Egger 39, 15 Jan. 1912, 862.

7. *b6* F3

- a. Via Po 224 (pl. 5).

8. *a15* F3

- a. Strack 216 (Berlin).
- b. Hunter 170.
- c. Münzen und Medaillen, 19-20 June 1964, 327 = Santamaria, 26 June 1950 (Magnanuti 3), 84 = Naville 17, 3 Oct. 1934, 1365.

9. *b6* F4

- a. Coin Galleries, 15 Oct. 1955, 849.

10. *b8* F4

- a. Hirsch 75, 22-24 Nov. 1971, 666 = Cahn 66, 9 May 1930, 648.
- b. Hirsch 18, 27 May 1907, 765.

- 10a. *a5* F4
 *a. BNF FG 518.
11. *a15* F5
 a. Hamburger, 27 May 1929, 969.
 b. Schulman, 18 Jan. 1938, 13.
12. *a5* F5
 a. Ratto, 19 Jan 1956, 116.
13. *b2* F5
 *a. Glendining, Nov. 16/17 and 20/21 1950, 1289.
14. *a16* F5
 a. Schulman 62, 692.
15. *b2* F6
 a. Liberchies 209 (pl. 18).
16. *b4* F6
 a. Erla 475.
 *b. Münzen und Medaillen, 6-7 Dec. 1968, 419.
 c. Münzen und Medaillen, 15-17 June 1971, 62.
 d. Santamaria, 24 Jan. 1935, 456.
 e. Belloni 136.
17. *a17* F6
 a. Didcot 56.
18. *c2* F7
 a. Braga 45.
 b. Superior Stamp and Coin, winter 1982, 198.
 c. Hirsch 178, May 1993, 782 = Schulman, 8-10 June 1966, 1729 = Cahn, 26 Nov. 1930, 341 = Seaby, 15 July 1929, 744 = Hess, 6 Jan 1926 (Löbbecke), 1120.
19. *c3* F7
 a. BMC 510 = Corbridge 83 (pl. 16.2)
 *b. Glendining, 20 Feb. 1951, 1730 = Rollin & Feuardent, 25-30 Apr. 1887 (Ponton d'Amécourt), 209.
20. *a18* F7
 a. Erla 474.
 b. Cahn 80, 27 Feb. 1933, 655.
 c. Hess, 5 Apr. 1955, 86 = Feuardent, 9 June 1913 (Jameson), 92.

- d. BRB 5.
- 20a. a18 F8
 - *a. BNF FG 520.
- 21. a19 F8
 - a. Naville 18, 10 Oct. 1938, 181 = Ars Classica 15, 2 July 1930 (Sartiges), 140.
- 22. a20 F8
 - a. Via Po 223 (pl. 5).
- 23. a21 F9
 - a. Sotheby, 13 June 1911, 487.
 - b. Münzen und Medaillen, Oct./Nov. 1951, 179 = Glendining, Nov. 1950, 1290.
 - *c. BNF FG 517.
- 24. a22 F9
 - a. Hess, 1 Dec. 1913, 528.
 - b. BRB 7.
- 25. e1 F10
 - a*. BNF Rothschild 238.

II. Basilica Ulpia (B)

Reverse: **BASILICA VLPIA** (in ex.). Facade with sculpture.

- 1. a14 B1
 - a. Hunter 164.
 - *b. Leu 7, 9 May 1973, 367.
 - c. Belloni 129.
 - d. BNF FG 503.
- 2. b4 B2
 - *a. Agora, 14 May 1974, 203.
- 3. a16 B3
 - a. Via Po 222 (pl. 5).
 - b. Hess 207, 1 Dec. 1931, 1040.
 - *c. Glendining, Nov. 16/17 and 20/21 1950, 1295.
 - d. Hirsch 189, Feb. 1996, 545
 - e. Glendining, 20 Feb. 1951, 1725.
 - f. Vinchon, 29 Oct. 1962, 23.
 - g. Leu & Münzen und Medaillen, 2-3 Nov. 1967 (Niggeler 3), 1219.

- h. Santamaria, 26 June 1950 (Magnaguti 3), 85 = Schulman, 10 Oct. 1933, 69 = Schulman, 5 May 1913, 1399.
- i. Santamaria, 13 Mar 1953, 21 = Helbing 70, 9 Dec. 1932, 66.
- j. Feuardent, 9 June 1913 (Jameson), 91.
- k. BRB 1.
- l. BNF FG 504.
- 4. c2 B3
 - a. Erla 473 (pl. 3).
- 5. a23 B3
 - a. Num. Ars Classica, 16 Nov. 1994 (Steinberg), 372.
- 6. a24 B3
 - a. Sotheby, 4 May 1908, 260.
- 7. a25 B3
 - a. Strack 202 (Berlin).
 - b. Münzen und Medaillen, 3 Nov. 1945, 419.
- 8. a25 B4
 - *a. BMC 492 = Packer fig. 9.
- 9. a26 B5
 - *a. Hirsch 20, 13 Nov. 1907, 551.
- 10. a27 B5
 - a. Naville 17, 3 Oct. 1934, 1359.
 - b. Basel Münzhandlung 6, 18 May 1936, 1654.
- 11. a28 B5
 - a. Münzen und Medaillen, 1-2 July 1955, 763.

III. Via Traiana (V)

Reverse: **S P Q R OPTIMO PRINCIPI; VIA TRAIANA** (in ex.). Woman reclining l., holding wheel.

- 1. a18 V1
 - a. Münzen und Medaillen, 17-19 June 1954, 681.
 - *b. BNF FG 560.
- 2. a20 V2
 - a. BMC 484.
 - b. Hamburger, 29 May 1929, 599.
 - c. BRB 8, Coll. du Chastel.
- 3. a29 V2
 - a. Hunter 162.

- *b. Glendining, Nov. 1950, 1294.
- c. Hess, 9 May 1951, 104.
- d. Hess & Leu, 16 Apr. 1957, 358. = Glendining, 10 Feb 1951, 1743.

4. a30 V2

- a. Villach 127 (pl. 20).
- b. BNF Rothschild 264.

5. c4 V2

- a. BMC 485.

IVa. Trajan Senior (P)

Reverse: **DIVVS PATER TRAIANVS**. Bare bust of Trajan senior r., draped.

1. a1 P1

- a. BMC 507.
- *b. Santamaria, 29 Nov. 1920, 609.

2. a1 P2

- a. BMC 506.

3. a2 P2

- *a. McSorley fixed price list, no date, 18.
- b. Vitalini, 9 Mar. 1891, 21.
- c. Santamaria, 13 Mar. 1953 (Signorelli), 116.
- d. Santamaria, 7 Mar. 1910 (Hartwig), 1327.

4. a2 P3

- a. BMC 508 = Corbridge 82 (pl. XVI.1).
- *b. Hess, 14 Apr. 1954, 270 = Feuarent, 9 June 1913 (Jameson), 98 = Rollin & Feuarent, 27 May 1889, 342.

5. a3 P2

- a. Strack 214 (Berlin).

5a. a13 P2

- a. BNF Rothschild 267.
- b. BNF Armand Valton 969.

6. a4 P4

- *a. Glendining, 20 Feb. 1951, 1750 = Hamburger, 19 Oct. 1925, 833.

7. c1 P5

- a. Santamaria, 26 June 1950 (Magnaguti 3), 1 = Ratto, 8 Feb.

1928, 2668 = Naville 3, 16 June 1922, 52.

- *b. Sotheby, 19 Jan. 1914 (Clark), 376.
- c. BNF FG 587.

IVb. Trajan Senior (P)

Reverse: **DIVVS PATER TRAIAN.** Type as IVa above.

1. a5 P6

- a. Münzen und Medaillen, 12 July 1955, 764 = Serrure, 30 March 1914, 370.²⁴

2. b1 P6

- a. Cahn 80, 27 Feb. 1933, 669.

3. b2 P6

- a. Seaby 2, 15 July 1929, 760 = Helbing, 24 Oct. 1927, 3550.
- b. Hirsch 11, 4 May 1904, 872.

4. b3 P6

- *a. Naville 11, 18 June 1925, 525 = Sotheby, 13 June 1911 (Sandeman), 499.
- b. Hunter 167.
- c. Schulman, 5 Mar. 1923 (Vierordt), 1272 = Sambon, 18 Nov. 1907 (Martinetti), 1929.
- d. Belloni 135.

5. b4 P7

- *a. Vinchon, 6-7 May 1955, 338.

6. b5 P7

- a. BMC 505.

V. Deified Nerva and Trajan Senior (N)

Reverse: **DIVI NERVA ET TRAIANVS PAT.** Facing busts of Nerva, r., laureate and draped, and Trajan senior l., bare-headed.

1. a2 N1

- a. Münzen und Medaillen, 12 July 1955, 765.
- *b. Belloni 131.

²⁴ The Serrure coin appears to show a crescent behind the emperor's bust; this crescent is clearly not present on the Münzen und Medaillen illustration, and there is no mention of any alteration to the coin.

2. *a3* N2
 - a. Ratto, 12 May 1925, 1122 = Schulman, 5 Mar. 1923 (Vierordt), 1273 = Merzbacher, 2 Nov. 1909, 1434
 - b. BNF FG 589.
3. *a6* N2
 - *a. Leu, 16-18 May 1984 (Garrett 1), 776 = Naville 8, 25 June 1924, 859.
4. *a5* N2
 - a. Vinchon, 6-7 May 1955, 339.
5. *b3* N2
 - a. ANS 1944.100.43614.
 - b. BMC 499.
 - c. Schulman, 19 Nov. 1968, 376 = Schulman, 8-10 June 1966 = Naville 17, 3 Oct. 1934, 774 = Helbing 70, 9 Dec. 1932, 95.
6. *b4* N2
 - a. Villach 133 (pl. 20).
 - b. Sotheby, 4 May 1908 (Wilkinson and Hodge), 296.
 - c. Canessa, 28 June 1923 (Caruso), 297 = Rollin & Feuarent, 26 May 1909, 96.
7. *b5* N2
 - a. Hunter 166.
 - b. Münzen und Medaillen, 5-6 June 1959, 210.
 - c. Hess, 25 Mar. 1929 (Vogel), 805.
8. *b5* N3
 - a. Feuarent, 9 June 1913 (Jameson), 99.
 - b. Egger 39, 15 Jan. 1912, 913 = McSorley fixed price list, no date, 20.
9. *b6* N3
 - a. Leu, 2-3 Nov. 1967 (Niggeler), 1233.
10. *a7* N3
 - a. Basel Münzhandlung 10, 15 Mar. 1938, 604.
 - b. Leu 71, 24 Oct. 1997, 366 = Rosenberg, 9 Mar. 1914, 346.
11. *b7* N3
 - *a. Hess, 5 Apr. 1955, 88 = Naville 18, 10 Oct. 1938, 202 = Ars Classica 15, 2 July 1930 (Sartiges), 152 = Hirsch 18, 27 May 1907, 801.

12. a8 N3

- a. Canessa, 28 June 1923 (Caruso), 296 = Hirsch 29, 9 Nov. 1910, 985.

13. a9 N4

- a. Via Po 258 (pl. 6).
- *b. Leu 52, 15 May 1991, 194 = Münzen und Medaillen, 15-17 June 1971, 63.
- c. Helbing, 17 June 1929, 4186 = Helbing, 20 Mar. 1928, 523.

14. a10 N4

- a. Hess, 9 May 1951, 106.

15. a10 N5

- a. BMC 498.
- b. Santamaria, 24 Jan. 1938, 475.

16. a11 N5

- *a. Hess & Leu, 2 Apr. 1958, 318 = Ratto, 19 Jan 1956, 127.

17. a20 N6

- *a. BNF FG 588.

VI. Mars Victor (M)

Reverse: **MARS VICTOR**. Mars standing, holding spear and trophy.

1. a12 M1

- *a. Rollin & Feuardent, 20 Apr. 1896 (Montagu), 267.

VII. Jupiter Conservator (J)

Reverse: **CONSERVATORI PATRIS PATRIAE**. Large male figure standing r., draped, staff in left arm and holding a thunderbolt over the head of a small figure dressed in a toga and holding a branch.

1. a31 J1

- a. Santamaria, 24 Jan 1938, 446.
- *b. Santamaria, 13 Mar. 1953, 23.

2. a32 J1

- a. Strack 203 (Berlin).
- b. Cahn 80, 27 Feb. 1933, 653.

3. a33 J2

- a. Vinchon, 28 Feb.-1 Mar. 1972, 117.

4. a34 J2

- *a. Cahn 66, 9 May 1930, 645.

- b. Belloni 130.
- 5. a36 J3
 - *a. Helbing 63, 29 Apr. 1931, 583.
- 6. a39 J4
 - *a. ANS 1944.100.43613 = Sotheby, 5 June 1905 (Smith), 441.
- 7. a40 J4
 - a. Ciani, 22 Feb. 1935 (Grandprey), 474.
- 8. a41 J4
 - a. Kress Munich, 3-5 Apr. 1975, 268.
- 8a. a50 J4
 - a. BNF FG 505.
- 9. b10 J5
 - a. Hunter 165.
 - b. Stack's, 14-15 June 1971, 15.
 - c. Ciani, 19 Apr. 1925, 168 = Ciani, fixed price list, no date, 221.
 - *d. Glendining, 20 Feb. 1951, 1726.
 - e. BNF Rothschild 225.
- 10. b11 J6
 - a. BMC 494.
 - *b. Naville 17, 3 Oct. 1934, 753.
- 10a. b20 J6
 - a. BRB 2.
- 11. b11 J7
 - a. Merzbacher, 2 Nov. 1909, 1387.
- 12. b12 J7
 - *a. ANS 1001.1.22273.
- 13. b14 J8
 - a. Schulman, 24-26 Apr. 1952, 1163 = Hess, 9 May 1951, 91.
- 14. b15 J8
 - a. Hess & Leu, 4 Apr. 1963, 172.
 - *b. McSorley, fixed price list, no date, 19.
- 15. d1 J9
 - a. BMC 493.
 - b. Feuarent, 26 May 1914, 361.
 - c. BRB 3.

16. a42 J9
 - *a. Bourgey, 16 Mar. 1913, 208.
17. a43 J9
 - a. Via Po 229 (pl. 5).
18. b17 J10
 - a. ANS 1905.57.651 (sold as a duplicate in 1968; cast at ANS).
 - *b. Schulman, 5 June 1936, 381 = Hamburger 96, 25 Oct. 1932, 877.

VIII. Legionary Eagle and Standards (S)

Reverse: **S P Q R OPTIMO PRINCIPI**. Aquila flanked by legionary standards, one topped by a hand and the other by a wreath.

1. a31 S1
 - *a. ANS 57.172.1616.
2. a32 S1
 - a. Erla 495.
 - b. Numismatica Wein, 20-21 Nov. 1975, 378.
3. a33 S1
 - a. Glendining, 20 Feb. 1951, 1741.
4. a33 S2
 - *a. ANS 1001.1.30090.
5. a35 S2
 - a. Vinchon, 26 Oct. 1964, 30.
- 5a. a56 S2
 - a. BNF Rothschild 263.
6. b14 S3
 - *a. Bourgey, 6-7 May 1971, 151.
7. b14 S4
 - a. Via Po 227 (pl. 5).
 - *b. BMC 456.
 - c. Bourgey, 18 Dec. 1912, 129.
 - d. BNF FG 554.
8. b15 S4
 - a. BMC 457 = Corbridge 79 (pl. 15.15).
9. b16 S4
 - a. Kricheldorf, 23 Sept. 1963, 242.

10. a45 S4
 - a. Crowley Coins and Ant. fixed price list 3, 1972, 174 = idem 1, 1971, 770 = idem 1, 1970, 353.
11. b17 S5
 - *a. Naville 17, 3 Oct. 1934, 771 = Helbing 70, 9 Dec. 1932, 93.
12. a46 S6
 - *a. ANS 1956.114.59 = Spink, 15-16 Feb. 1977, 532 = Münzen und Medaillen, 5 Dec. 1968, 302.
13. a47 S7
 - *a. ANS 56.184.31.
14. a48 S8
 - a. Hunter 155.
 - *b. Schulman, 10 Oct. 1933, 72 = idem, 5 May 1913, 162.
 - c. Bourgey, 24-25 June 1971, 54.
15. b18 S8²⁵
 - a. Egger 45, 12 Nov. 1913, 1026.
 - b. Numismatic Fine Arts, 20-21 Mar. 1975, 331.
 - c. Leu & Münzen und Medaillen, 2-3 Nov. 1967 (Niggeler 3), 1218.
 - d. G. Hirsch, 2-3 Apr. 1959, 837.
 - e. Naville 8, 25-28 June 1924, 848.
16. a49 S8²⁶
 - *a. Didcot 54.
17. a50 S9
 - a. Didcot 53.
 - *b. Santamaria, 13 Mar. 1953 (Signorelli), 78.

IX. Bonus Eventus standing alone (BE)

Reverse: **S P Q R OPTIMO PRINCIPI**. Figure standing l., holding patera and corn ears.

²⁵ This is the only instance I have found in this series of die wear: all examples of S8 paired with b18 show evidence of die breaks, especially visible at the base of the letter N in **PRINCIPI**, which do not appear on any examples of S8 paired with obverse die a48.

²⁶ This coin also appears to have die wear on the N, as above, but the illustration is unclear.

1. a31 BE1
 - a. Via Po 225 (pl. 5).
2. a33 BE1
 - *a. Hess, 18 Nov. 1947 (Grunthal), 1325.
3. a35 BE1
 - a. Vinchon, 2-4 May 1973, 539.
 - b. Naville 17, 3 Oct. 1934, 769 = Helbing 70, 9 Dec. 1932, 85.
4. a36 BE1
 - a. Strack 184 (Berlin).
5. a37 BE1
 - a. Glendining, 11 May 1966, 10 = idem, 20 Feb. 1951, 1736.
6. a38 BE1
 - a. BMC 426 = Corbridge 80.
7. a35 BE2
 - a. BMC 425.
8. a39 BE2
 - *a. Hess, 9 May 1951, 100.
9. a43 BE3
 - *a. Coin Galleries, 20 Apr. 1961, 24 = idem, fixed price list Sept.-Oct. 1961, 329.
10. a44 BE3
 - a. Münzen und Medaillen, 17-19 June 1954, 680.
 - b. BRB 9.
11. b17 BE4
 - *a. Erla 486.
 - b. Hunter 142.
 - c. Num. Fine Arts and B. Leu, 29 March 1985 (Garrett 3), 272.
12. a46 BE5
 - *a. Baranowski, 9 Dec. 1929 (Cuzzi 1), 606.
13. a47 BE6
 - a. Didcot 51.
 - b. Didcot 52.
 - *c. Naville 17, 3 Oct. 1934, 770 = Helbing 70, 9 Dec. 1932, 86.
14. a51 BE7
 - *a. ANS 58.214.14.
 - b. BM 1964 12-3 110.

15. b19 BE8

- *a. Münzen und Medaillen, 15-17 June 1971, 61 = Hess, 28 Mar. 1929 (Vogel), 800.

16. a45 BE9

- *a. BRB 10.

17. a54 BE10

- a. BNF FG 548.

18. a55 BE10

- *a. BNF Rothschild 260.

X. Bonus Eventus with Altar (BEA)

Reverse: S P Q R OPTIMO PRINCIPI. Standing figure holding patera and corn ears, beside square garlanded altar.

1. b9 BEA1

- a. BMC 432.

2. b10 BEA1

- *a. ANS 57.172.1615.

3. b11 BEA1

- a. ANS 1944.100.81349 = Münzen und Medaillen, 5 Dec 1968, 301= Ciani, 25 Oct. 1920, 167.

4. b12 BEA2

- a. Erla 488.
- b. Via Po 226 (pl. 5).
- c. Vinchon, 6-7 May 1955, 332.

5. b13 BEA2

- *a. Hamburger, 19 Oct. 1925, 804.

6. b13 BEA3

- *a. Stack's, 4-7 May 1960 (Neumoyer), 385.

XI. Trajan's Column (C)

Reverse: S P Q R OPTIMO PRINCIPI. Trajan's column.

1. a41 C1

- *a. Hunter 151.

2. a52 C2

- a. BMC 449.
- b. Hess, 9 May 1951, 102.
- *c. Santamaria, 6 Apr. 1908, 470.

3. a53 C2

- a. BMC 450 = Corbridge 81 (pl. 15.17).²⁷
- b. BRB 11, Coll. du Chastel.

4. c5 C3

- *a. Sternberg 13, 17-18 Nov. 1983, 635 = Baranowsky fixed price list 1932, 685.

5. c6 C4

- *a. Strack 197 (ex Ryan collection) = Glendining, 20 Feb. 1951, 1740.²⁸

XII. Fortuna Redux (FR)

Reverse: **S P Q R OPTIMO PRINCIPI, FORT RED** in ex. Female seated l., holding cornucopia.²⁹

1. b17 FR1

- *a. Naville 17, 3 Oct. 1934, 759 = Helbing 70, 9 Dec. 1932, 71.
- b. Liberchies 208.

2. b11 FR2

- *a. Naville 2, 12-14 June 1922, 619.

XIII. Profectio Augusti (PR)

Reverse: **PROFECTIO AVG** in ex. Trajan on horseback, riding r., two soldiers behind and one in front.

1. b13 PR1

- *a. BMC 511.

XIV. Rex Parthus (RP)

Reverse: **REX PARTHVS** in ex. Trajan seated l. on podium, behind him an attendant. In front of the podium a stooping figure and, in the background, soldiers with military standards.

1. b20 RP1

- *a. Gnechi 16 (pl. 4).

²⁷ Contrary to notes 449 and 450 in BMC III (pp.93-94), BMC 450 does not have the same obverse die as BMC 449 (although they do share the same reverse die).

²⁸ The quality of epigraphy on this coin is closer to that common on denarii.

²⁹ A third reverse die, used to my knowledge only with obverse b17, was found as part of a recently discovered hoard at Regensburg-Kumpfmühl. My thanks to Dr. Andreas Boos and also to Prof. Dr. Bernhard Overbeck for this information.

XV. Equus Traianus (ET)

Reverse: S P Q R OPTIMO PRINCIPI. Trajan seated l. on horseback, right hand raised holding spear.

1. a20 ET1

*a. BNF FG 549.

Two Forgeries

Forgery 1, Forum type, Hess 211, 9 May 1932, 2063 = Naville 3, 16 June 1922, 49. This coin is noted in Naville 3 as having been acquired in Athens in 1913 by Sir A. Evans; the ANS has an example, but not in gold, in the forgery collection.

Forgery 2, Forum type, Santamaria, 29 Nov. 1920, 559.

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ABBREVIATIONS

BMC = Mattingly, H. 1936. *Coins of the Roman Empire in the British Museum, volume III: Nerva to Hadrian*. London: British Museum.

FRMÖ = *Die Fundmünzen der römischen Zeit in Österreich*. Wien: Österreichischen Akademie der Wissenschaften.

Jacoby = Jacoby, F. 1930. *Die Fragmente der griechischen Historiker*. Berlin: Weidmann.

RIC = Mattingly, H. and E.A. Sydenham. 1926. *The Roman imperial coinage, volume II: Vespasian to Hadrian*. London: Spink & Son.

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INDEX OF LINKED TYPES

This index lists all reverse dies *of different types* which are linked through a common obverse die, as are indicated in the above catalogue by obverse die numbers in *italics*. Obverses which link only to reverses of one type are not listed; these are easily seen in the die link charts. Obverse dies are listed in order, followed by reverse dies to which they link.

Obverse	Reverse Types	Obverse	Reverse Types
a2 -	P2 P3 N1	b2 -	P6 F5 F6
a3 -	P2 N2	b3 -	P6 N2
a5 -	P6 F4 F5	b4 -	P7 N2 B2 F6
a12 -	F1 M1	b5 -	P7 N2 N3
a13 -	F1 F2 F3 P2	b6 -	N3 F3 F4
a14 -	F1 F3 B1	<u>b10</u> -	J5 BEA1
<u>a16</u> -	F5 B3	<u>b11</u> -	J6 J7 BEA1 FR2
<u>a18</u> -	F7 F8 V1	<u>b12</u> -	J7 BEA2
<u>a20</u> -	F8 N6 V2 ET1	<u>b13</u> -	BEA2 BEA3 PR1
<u>a31</u> -	J1 S1	<u>b14</u> -	J8 S3 S4
<u>a32</u> -	J1 S1	<u>b15</u> -	J8 S4
<u>a33</u> -	J2 S1 S2 BE1	<u>b17</u> -	J10 S5 BE4 FR1
<u>a35</u> -	S2 BE1 BE2		
<u>a36</u> -	J3 BE1	<u>c2</u> -	F7 B3
<u>a41</u> -	J4 C1		
<u>a43</u> -	J9 BE2		
<u>a46</u> -	S6 BE5		
<u>a47</u> -	S7 BE6		
<u>a50</u> -	J4 S9		

INDEX OF OBTVERSE DIE ILLUSTRATIONS

Below, the obverse dies illustrated are listed in order, followed by references to the catalogue entries of the actual coin illustrated.

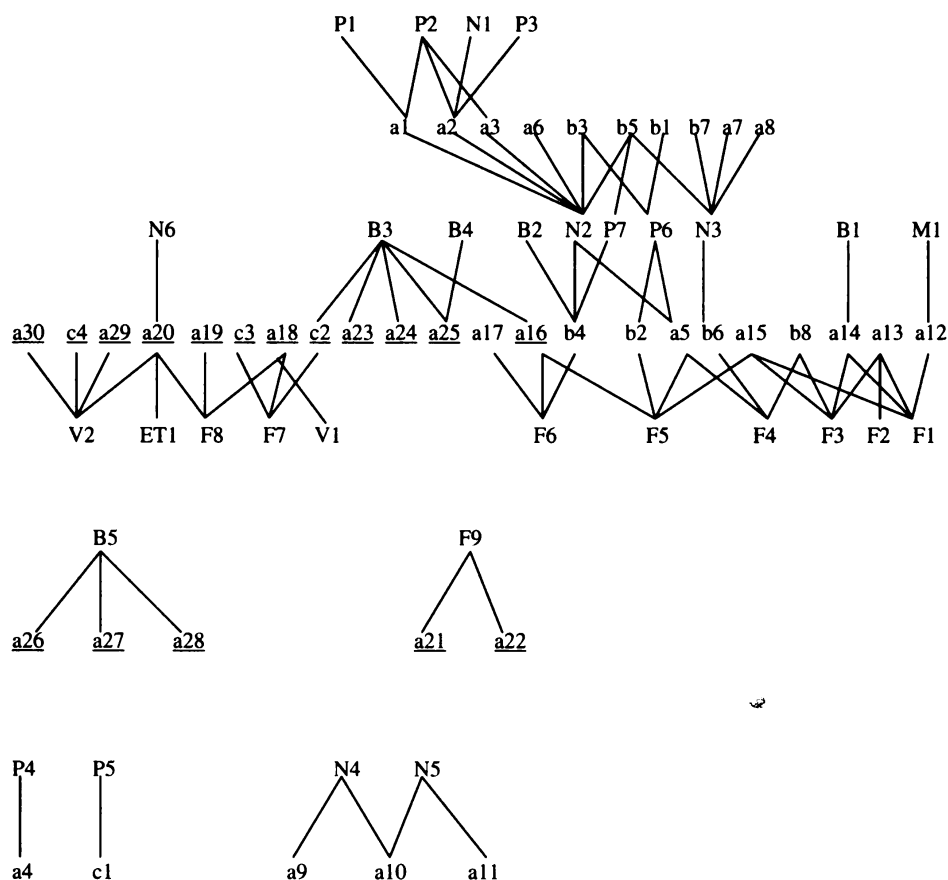
a1 = IVa.1.b	a33 = VIII.4.a	b8 = I.10.b
a2 = IVa.4.b	a34 = VII.4.a	b9 = X.1.a
a3 = V.2.b	a35 = IX.3.b	b10 = X.2.a
a4 = IVa.6.a	a36 = VII.5.a	b11 = VII.11.a
a5 = IVb.1.a	a37 = IX.5.a	b12 = VII.12.a
a6 = V.3.a	a38 = IX.6.a	b13 = X.5.a
a7 = V.10.a	a39 = VII.6.a	b14 = VIII.7.d
a8 = V.12.a	a40 = VII.7.a	b15 = VII.14.b
a9 = V.13.b	a41 = XI.1.a	b16 = VIII.9.a
a10 = V.14.a	a42 = VII.16.a	b17 = VII.18.b
a11 = V.16.a	a43 = IX.9.a	b18 = VIII.15.e
a12 = I.1.b	a44 = IX.10.a	b19 = IX.15.a
a13 = IVa.5a.b	a45 = VIII.10.a	b20 = XIV.1.a
a14 = II.1.d	a46 = VIII.12.a	
a15 = I.3a.a	a47 = VIII.13.1	c1 = IVa.7.b
a16 = II.3.c	a48 = VIII.14.b	c2 = I.18.c
a17 = I.17.a	a49 = VIII.16.a	c3 = I.19.b
a18 = III.1.b	a50 = VII.8a.a	c4 = III.5.a
a19 = I.21.a	a51 = IX.14.a	c5 = XI.4.a
a20 = V.17.a	a52 = XI.2.c	c6 = XI.5.a
a21 = I.23.c	a53 = XI.3.a	
a22 = I.24.a	a54 = IX.17.a	
a23 = II.5.a	a55 = IX.18.a	
a24 = II.6.a	a56 = VIII.5a.a	
a25 = II.8.a		
a26 = II.9.a	b1 = IVb.2.a	
a27 = II.10.a	b2 = I.13.a	d1 = VII.15.b
a28 = II.11.a	b3 = IVb.4.d	
a29 = III.3.b	b4 = V.6.b	
a30 = III.4.b	b5 = V.8.a	e1 = I.25.a
a31 = VIII.1.a	b6 = V.9.a	
a32 = VII.2.b	b7 = V.11.a	

DIE-LINK CHARTS

These charts fall into three series (groups 1-3), which are each composed of die-linked types. No die links whatsoever have been found between these three main groups. To both groups 1 and 2 have been added individual die pairs or small linked series which do not link to the main series but are of the same obverse and reverse types. Group 3 is defined by its common links to the Bonus Eventus with altar (BEA) type, which links to no other group; it is otherwise very similar in types to group 2.

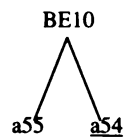
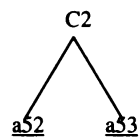
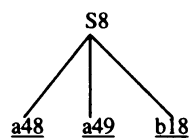
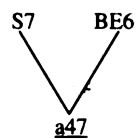
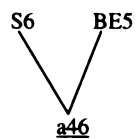
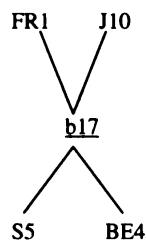
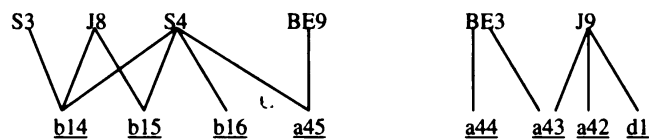
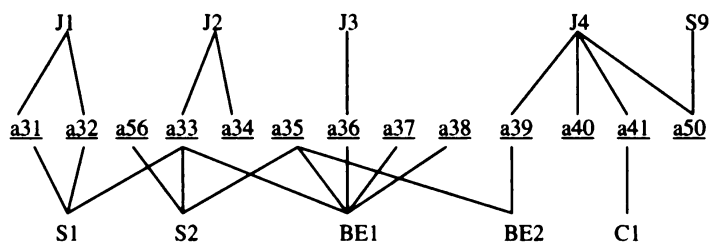
Group 1

Basilica Ulpia (B) + Forum of Trajan (F) + Via Appia (V) + Mars Victor (M) + Trajan Senior (P) + Deified Nerva and Trajan Senior (N)



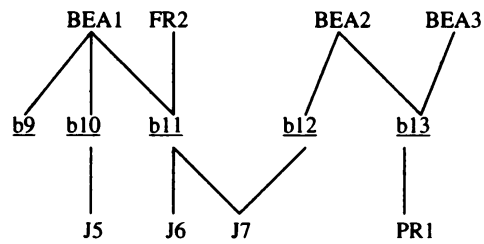
Group 2

Jupiter Conservator (J) + Standards (S) + Bonus Eventus (BE) +
Column of Trajan (C) + Fortuna Redux (FR)



Group 3.

Bonus Eventus with Altar (BEA) + Jupiter Conservator (J) +
Fortuna Redux (FR) + Profectio (PR)



JULIAN, GALLIENUS, AND THE SOLAR BULL

DAVID WOODS*

The pagan emperor Julian (360–363) issued a new denomination of bronze coin in 362 whose reverse type aroused controversy at the time and whose correct interpretation continues to exercise the ingenuity of modern scholars (Figure 1).¹

This type depicts a standing bull, with its head erect, facing towards the right. It also depicts two stars above the bull, one above his head and the other above his back. The accompanying reverse legend reads **SECVRITAS REI PVBLICAE**, i.e., “the security of the State” (see *RIC* 8 *passim*).² Traditionally, coins had associated the legend **SECVRITAS**

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¹ Julian (*Misopogon* 355d) reveals that the people of Antioch criticized the designs upon his coinage. It is generally agreed that it was his so-called bull coinage in particular that they attacked, although Julian does not explicitly state this. It is also agreed, given that the overwhelming majority of Antiochenes seem to have been Christian, that their criticisms were probably religious in origin rather than purely aesthetic or even economic.

² All mints throughout the empire issued this coin with the exception of Alexandria, Rome, and Trier, although the last produced no bronze coinage at all under Julian. It is noteworthy that coins of this type issued at Arles depict an eagle with a wreath in its beak, and another in its talons, to the lower front of the bull. Given that Arles alone produced this variant, the eagle can have no bearing upon our interpretation of the central device of this type, the bull, since it is clear that it did not feature in the original model circulated by the court to the various mints. One also notes that the features of the bulls varied somewhat, with the western mints



FIGURE 1. Coin of Julian with bull image (ANS 1944.100.21966), not to scale.

with a depiction of the personification of this concept. This personification had consisted of a lady holding a scepter and either sitting on a throne or leaning against a column.³ The use of most such traditional personifications fell into increasing disfavor from the reign of Constantine I (306–337) onwards, resulting in some noticeable new reverse types. In addition to some coins of the traditional type, Constantine's reign also witnessed, for example, the issue c. 325–27 in the name of his mother Helena of coins bearing the legend **SECVRITAS REIPVBLICE** [sic] in association with a standing female figure lowering a branch (*RIC* 7 *passim*).⁴ Others simply depicted the emperor himself, in military guise and often accompanied by his sons,⁵ while others again, some small bronzes issued c. 336–37 in the name of Constantine's nephew and Caesar Hannibalianus, bore the legend **SECVRITAS PVBLICA** and depicted the personification of the river Euphrates reclining on the

depicting a smooth-backed bull while the eastern mints favored a hump-backed version. There were differences also in the proximity and sizes of the stars relative to one another.

³ See, e.g. *RIC* 4.3:22 Gordian III no. 61 for a seated Securitas, 4:31 Gordian III nos. 151–153 for a Securitas standing leaning against a column.

⁴ They were issued at all mints that produced bronze coinage.

⁵ For the emperor standing alone and erecting a military trophy, see, *RIC* 7:367 Ticinum no. 49, 7:397 Aquileia no. 33, 7:473 Sirmium no. 42, 7:609–610 Nicomedia nos. 53–54, 7:683 Antioch no. 38; for the emperor accompanied by three Caesars, see *RIC* 7:580 Constantinople no. 67, and by four Caesars, *RIC* 7:583 Constantinople no. 89.

ground (*RIC* 7:589 Constantinople nos. 145–148). Constantine's sons and successors issued few types with this legend, for understandable reasons perhaps, and those that they did issue bore the traditional personification of *Securitas*. However, Julian's successor Jovian (363–364) proved innovative once more and issued gold *solidi* bearing the legend **SECVRITAS REI PVBLICAE** which depicted either the enthroned figures of Roma and Constantinopolis bearing a votive wreath or shield between them or a standing figure of the emperor himself holding a standard with a chi-rho upon its flag.⁶ Indeed, the personification of *Securitas* never appeared on coinage after Constantius II (337–361). The imperial brothers Valens (364–378) and Valentinian I (364–375), for example, issued small bronze coins associating the legend **SECVRITAS REIPVBLICAE** with a depiction of the personification of Victory advancing to the left with a wreath in one hand and a palm in the other (*RIC* 9 *passim*).⁷ Hence one ought not to read too much in the decision by Julian not to depict the traditional personification of *Securitas* on his new reverse type bearing the legend **SECVRITAS REI PVB[LICAE]**. Furthermore, since he was childless, and without a wife even, Julian could hardly depict himself with his sons in the manner of Constantine I. However, this still does not solve the problem posed by his final choice of design. What did the bull actually symbolize?

Answers have varied. One possibility is that the bull is a Jewish device. This was the interpretation advanced by a contemporary, Ephraem of Nisibis, writing in late 363 or early 364 (*Ephraem, Hymns Against Julian* 1.16–20). He identified the bull with the golden calf worshipped by the ancient Israelites during their wanderings in the desert following their flight from captivity in Egypt (*Exodus* 32.8). However, this is clearly “an idiosyncratic juxtaposition for the sake of his invective” (McVey 1989:231), and it is doubtful in the extreme whether even Ephraem himself could really have believed what he was saying. Certainly no modern historian of antiquity does. A

⁶ For the Roma and Constantinopolis type see, e.g., *RIC* 8:230 Arles no. 327, 8:393 Sirmium nos. 113–116, 8:532 Antioch no. 222–224; for the scarcer imperial type, see *RIC* 8:393 Sirmium nos. 109–112, 8:424 Thessalonica no. 229.

⁷ They were issued throughout their reigns at all mints that produced bronze coinage.

second interpretation seeks to identify the bull as a sacrificial victim and sees in it a reference to the great number and sizes of the sacrifices which Julian had become accustomed to offer to the gods during his stay at Antioch in late 362 and early 363. This is the interpretation held by the church historians Socrates and Sozomen, to the extent even that Socrates believed that these coins had depicted an altar alongside the bull, although not a single example of such a variant has yet come to light (Soc. *HE* 3.17.4; Soz. *HE* 5.19.2). At best Socrates had never actually seen an example of this reverse type and had simply misinterpreted his immediate source. At worst he deliberately invented this detail in order to lend more credence to his interpretation. A third possibility is that the bull is an Apis bull and that the coin celebrates the discovery under Julian in 362 of a new Apis bull in Egypt.⁸ However, the bull on Julian's coin does not bear the characteristic marking of an Apis bull, a crescent on its side.⁹ Nor is it accompanied by the same devices which had traditionally accompanied the Apis bull on earlier coinages from the mint at Alexandria, a disc between its horns and an altar to its fore. More significant, perhaps, is that Alexandria was one of the only three mints under Julian not to issue this reverse type. A fourth possibility is that the bull symbolizes the emperor himself, in reference to a common metaphor for leadership of any type, that a leader leads the common people just as a bull leads the rest of his herd (Kent 1954, adducing Dio Chrys. *Or.* 2.66).¹⁰ However, it is not clear why the people of Antioch should have taken issue with the production of coins of this reverse type, if all that had been at stake were such a bland metaphor, and as Julian's own testimony reveals, they certainly did take issue with the design of this coin, even if, unfortunately, he does not specify why exactly they did so. A fifth possibility is that the bull represents the star sign under which Julian had been born.¹¹ By this interpretation once more,

⁸ On the discovery of this bull, see Amm. Marc. 22.14.6.

⁹ For what follows see, most conveniently, Gilliard (1964:138–139, esp. pl. X).

¹⁰ J. Vanderspoel (1998:115) draws attention to a fragment of Himerius which utilizes the same basic metaphor.

¹¹ Proposed by Gilliard (1964:137–141), this interpretation has won the support of, for example, D. Bowder (1978:117–118) and is the only option which Kent (*RIC*

it is the emperor himself who guarantees the "Security of the State", but the main objection to this interpretation remains the same as in the previous case. Why should the people of Antioch, Christian or not, have objected to such a bland commonplace? We may also note that there is no independent corroboration that Julian had actually been born under this star sign. Next we come to the interpretation that has attracted most support over the years, that the bull and stars refer to the Mithraic religion into which Julian may have been initiated.¹² The details of the various Mithraic interpretations differ, but the same objections may be raised against all. The main objection must be that no parallel has been found among Mithraic iconography for the depiction of the bull in the manner that it is depicted upon Julian's reverse type. True, a bull does play a large role in the central icon of Mithraism, the tauroctony or bull-slaying, but it is depicted in a completely different manner, lying low on its stomach almost, with one foreleg bent back under it, the other stretched in front of it, and its head pulled back. A second objection must be that there is no clear evidence that Julian was actually an initiate into the Mithraic mysteries. Finally, one ought not to forget to mention that many scholars, perhaps wisely, have refused to commit themselves to any of the existing interpretations.¹³

It is important at this point, therefore, that we establish some methodological principles. Firstly, the better interpretation of this reverse type is that which provides the better parallel for the depiction of the bull in the manner that he is depicted upon this reverse type. Further-

8:47) considers "plausible" apart from his earlier suggestion of the bull as a metaphor for leadership (Kent 1954).

¹² For example, most recently it is the preferred option of Vanderspoel (1998) and of Barnes (1998:160). In fairness to Barnes, however, he prefaces his statements in favor of a Mithraic interpretation with the warning, "The type has never been convincingly explained".

¹³ For example, Browning (1975:156) notes simply that the Antiochenes objected to the "pagan symbolism" of this reverse, while Bowersock (1978:104) proves equally evasive in his description of this type "very probably having some kind of personal or mystical significance for the emperor". More recently, R. Smith (1995:262) commits himself only so far as to state that "J.'s puzzling Bull coinage probably does not show Apis, and certainly not Mithras".

more, the more contemporary the parallel the better, all else being equal. It is not the case that any bull will do if only we can find one somewhere among the relevant iconography to support our prior assumptions. For the unfortunate fact is that the iconography of the ancient world abounded with bulls, and it would be difficult not to find a bull that could be used to support almost any interpretation. For example, the emperor Augustus used a bull to symbolize Armenia upon an aureus issued at Pergamum c. 19–18 BC (*RIC* 1²:82–83 Augustus no. 514). Given that it was Greater Armenia that lay at the heart of the long-running dispute between Rome and Persia, and that Julian was planning an expedition to end this dispute at the time that he issued his new reverse type, it is rather surprising that no one (to the best of my knowledge) has yet interpreted Julian's reverse type to mean that possession of Greater Armenia was necessary for the security of the state, as a sort of justification for his forthcoming expedition. Indeed, the issue by Constantine I of coins associating the legend **SECVRITAS PVBLICA** with the personification of the river Euphrates provides a precedent for the interpretation of Julian's coin in this manner in that it proves that this legend could be associated with the symbol of a particular stretch of frontier territory. However, the weakness with this interpretation is that no example exists which represents Armenia as a bull exactly as depicted on Julian's reverse type.

Secondly, the better interpretation is that which better reflects the priorities of Julian himself. For example, a number of lead sealings have survived which reveal that a bull was the symbol of the province of Britannia Inferior (*RIB* nos. 2411.34–36).¹⁴ Most importantly, the bull resembles that upon the coinage under discussion here; he is depicted standing, facing right, with his head erect. It is tempting, therefore, to suppose that the bull continued as the emblem of one of

¹⁴ This identification relies on the expansion of the letters **PBI** over the bull's back to read **P[ROVINCIAE] B[RITANNIAE] I[NFERIORIS]**. Yet far more examples of this sealing have also been found at Trier (Leukel 1995:116 nos. 479–491). One may legitimately wonder whether the bull was the symbol rather of the late Roman province of Belgica Prima, the province within which Trier was situated, i.e., that the final **I** is a numeral rather than a letter, but this makes no difference here.

the two smaller provinces into which Britannia Inferior was subdivided by c. 314. Hence, on the grounds of appearance alone, one might be tempted to argue that Julian's coin could conceal some reference to this British province. However, our knowledge of Julian's priorities and interests reveals no special interest in Britain, so this possibility may be dismissed.

Finally, Julian's reverse type should not be considered in isolation, but in its full numismatic context. This sounds obvious, but it is a principle which has been largely ignored, especially by the advocates of a Mithraic interpretation, old and new alike. These have interpreted the two stars above the bull as symbols either of the Dioscuri or of the two torchbearers who normally accompany Mithras in the bull-slaying scene, *Cautes* and *Cautopates*, which identifications rest solely on the dual number of the stars and the prior assumption that the bull must be a Mithraic symbol.¹⁵ Yet several different reverse types throughout the first half of the fourth century depict a star or group of stars above their main device, so it is clear that these are not the property of any one emperor nor peculiar to any one system of beliefs. For example, Constantine issued bronze coins at three western mints c. 321–23 which depicted three stars above a globe on an altar surrounded by the reverse legend **BEATA TRANQVILLITAS** (*RIC* 7:110–115 London nos. 199–288; 131–134 Lyon nos. 125–208; 190–203 Trier nos. 303–334, 341–355, 368–428). More significantly, Constantine also issued bronze coins c. 330–31 which depicted two stars above a wolf suckling the twins Romulus and Remus, with no surrounding legend, a type which was continued by his sons for a short period after his death (*RIC* 7 *passim* and *RIC* 8 *passim*).¹⁶ Again, Constantius II (337–361) issued silver siliquae which depicted a single star above the central palm in a group of three surrounded by the legend, either **CONSTANTIVS AVG** in the case of those coins which bore his bust, or **CONSTANS AVG** in the case of those coins which bore his imperial brother's bust

¹⁵ Thieler (1962) identifies the stars as symbols of the Dioscuri, while Vanderspoel (1998) and Barnes (1998) prefer *Cautes* and *Cautopates*.

¹⁶ This type is known as the **VRBS ROMA** series because the obverse depicted a bust of Roma surrounded by this legend in place of the accustomed imperial bust. They were produced by all mints still in operation at the time.

(*RIC* 8:354 Siscia nos. 60–69). Similarly, Vetricano (350) issued billon coins which depicted a single star above the head of the emperor in military dress as he held a standard in each hand surrounded by the legend **CONCORDIA MILITVM**, and Constantius II maintained the same type in the immediate aftermath of Vetricano's abdication (*RIC* 8:369 Siscia nos. 270–292; 8:386–387 Sirmium nos. 21–22, 28–29, 33–34; 8:414–418 Thessalonica nos. 130–132, 135, 167). In context, therefore, it is clear that the stars on Julian's reverse type merely continue this iconographical tradition. Given the acceptance of the use of stars in this way by Constantine I himself at a time when he was indubitably Christian, it is clear that they did not bear even a vaguely pagan meaning, let alone a peculiarly Mithraic one. Rather, a star or group of stars seems to have come to be used to denote a divine presence in an entirely generic fashion acceptable to either pagans or Christians.¹⁷ The number of these stars was largely irrelevant, therefore a matter of aesthetics or the amount of space available in the reverse field, rather than a necessary function of the number or nature of the God or gods whose presence was being signified. Hence the two stars above the bull's head and back on Julian's reverse type have no bearing on the symbolism of the bull itself other than to signify a divine presence in the vaguest sense. They do not even clarify whether the bull itself is to be interpreted as the symbol of a god or whether a divine presence merely attends upon the bull in a fashion which can only be determined by the final identification of the bull itself.

It is at this point that I wish to introduce a piece of evidence which seems to have been ignored until now. The emperor Gallienus (253–268) issued a series of coins at Rome which named nine different gods or goddesses as the protectors of the emperor, each depicting a single animal as the symbol of the cult of the relevant god or

¹⁷ The use of stars in this manner was a long-standing iconographical tradition. For example, Caligula (37–41) had depicted the head of the deified Augustus (27 BC–AD 14) between two stars (*RIC* 1²:108 Gaius nos. 1–2). A fourth-century gold-glass medallion depicts two stars on either side of St. Agnes in an eerily similar fashion (Elsner 1998:233).

goddess.¹⁸ So, for example, the coin which bears the (expanded) legend **LIBERO P[ATRI] CONS[ERVATORI] AVG[VSTI]** depicts a tigress, while the type which bears the legend **IOVI CONS[ERVATORI] AVG[VSTI]** depicts a goat. In some cases, though, several different reverse types are associated with the same god. So, for example, the coins dedicated to Hercules depict either a lion or a boar. Again, the coins dedicated to Sol, those which bear the legend **SOLI CONS[ERVATORI] AVG[VSTI]**, depict either a winged horse or a bull, and it is the latter type which is of interest to us here (Figure 2).¹⁹



FIGURE 2. Coin of Gallienus with bull image
(by permission of Classical Numismatic Group, Inc.).

This type depicts a bull standing upright, with its head erect, exactly as on the Julianic reverse type. Indeed, it normally faces right as on the Julianic reverse type, although some specimens depict it facing left. It is irrelevant for the moment why exactly this bull should symbolize the cult of Sol, except to note, for example, that there is no indication that it was a sacrificial animal. In truth, there is no indication that any of the animals depicted on this series of coins

¹⁸ In general, see Weigel (1990); also Carradice (1983). I thank Prof. Carradice for a copy of this appendix.

¹⁹ For the winged-horse-type, see *RIC* 5.1:155 Gallienus nos. 282–284; for the bull-type, see *RIC* 5.1:156 Gallienus no. 285.

were intended to represent sacrificial offerings to the relevant gods or goddesses. This is obviously true in the case of the mythical animals, such as the winged horse on the other reverse type dedicated to Sol, or the griffin or centaur on the types dedicated to Apollo, but it holds true for the other types also.²⁰ The key point as far as we are here concerned is that the legend of the coin identifies the bull as a symbol of the cult of Sol in the most unambiguous fashion possible. This raises the possibility that the bull on the Julianic reverse type is a symbol of the cult of Sol also. This is not to claim that Julian was necessarily familiar with the Gallienic reverse type, but that they constitute independent testimonies to a wider iconographical tradition which has not left much mark otherwise.²¹

Since the identity of the bull on the Gallienic reverse type with the bull on the Julianic reverse type fulfills the requirement of our first methodological principle as already outlined, we now turn to our second principle. Would the presence of a symbol of the cult of Sol on his coinage reflect what we otherwise know about priorities of Julian himself? The answer is yes. Julian devoted a whole work to Sol, or Helios to call him by his Greek title, his *Hymn to King Helios*, which he composed at Antioch in late 362. In contrast, we know of no work dedicated to Mithras himself, for example. On the contrary, those who claim that Julian was a Mithraic initiate have to admit the dominance of Sol/Helios in his explicit testimony in order to press their case by identifying Sol and Mithras, or at least by stressing the solar aspects of the cult of Mithras.

It is my argument, therefore, that the bull on Julian's reverse type was a Solar rather than a Mithraic symbol. Admittedly, the distinction

²⁰ Carradice (1983:188) sees in the winged horse a reference to the chariot which Sol drove across the sky each day. As for the lion and boar on the coins dedicated to Hercules, he identifies these with the Nemean lion (1983:188) and the Erymanthian boar (1983:192) from the labors of Hercules. Hence the animals can be seen to derive from myth rather than cultic practice.

²¹ Given the rarity of the Gallienic reverse type—only 19 examples out of the 2,646 coins of this series found in the Cunetio hoard—and the fact that it was issued so long before Julian's own reign, it is unlikely in the extreme that he ever came across a piece of this type.

between the gods Sol and Mithras was not always clear,²² but if we accept that there was a spectrum of beliefs and images between those unique to the cult of Sol on the one hand and those unique to the cult of Mithras on the other, then it is my argument that, as depicted, the bull belonged at one extreme of this spectrum, among the images unique to the cult of Sol, rather than at the opposite extreme, among the images unique to the cult of Mithras, the position favored by those who would identify this bull with the bull of the Mithraic tauroctony.

Finally, if the bull is a Solar symbol, what is the message of Julian's reverse type? This depends, of course, on how and why the bull became a symbol of the cult of Sol. However, one possibility, which has the merit of being consistent with the accompanying legend **SECV-RITAS REI PVB[LICAE]**, is that the use of the bull in this fashion hearkens back to the legend of Helios's cattle as preserved by the *Odyssey*, for example (Homer, *Od.* 12.327–425).²³ According to this legend, Odysseus's men slaughtered and consumed some of Helios's cattle on the island of Sicily. Helios then appealed to Zeus to punish Odysseus's men, and Zeus sank Odysseus's ship, sparing only Odysseus because he himself had not sanctioned, nor participated in, the consumption of the cattle. The message of Julian's coin, therefore, is that Sol protects that which belongs to him. More specifically, using the myth of the cattle of Sol/Helios as a metaphor, the two stars symbolize the protective presence of Sol while the bull represents the state. In brief, it is Sol who guarantees the **SECV-RITAS REI PVB[LICAE]**. The second merit of this interpretation, of course, is that it is also consistent with the thought and taste of an emperor who was accustomed to pepper his works with quotations from or allusions to both

²² For example, according to R. Beck (1998:123–124), Mithraism was invented by members of the Commagenian royal family and their supporters in the mid to late first century AD, and "the 'invention' of Helios-Mithras in the Commagenian royal cult [first century BC] is sufficient causal explanation of the solarity of Mithras in the Mysteries", i.e., that the tendency to identify Sol and Mithras, to varying degrees, had been present in Mithraism from the start.

²³ Admittedly, Homer does not mention bulls as such. However, they play a large part, for example, in the mathematical problem which Archimedes posed to Eratosthenes of Cyrene in the form of a discussion of the number of bulls in the various herds owned by Helios on Sicily (Thomas 1941:203–205).

of the great Homeric epics. Last, but not least, this interpretation reveals the coin as an artistic representation, a continuation even, of a metaphor which Julian himself had first used in his speech *Against the Cynic Heraclius*, which he had delivered at his court in Constantinople during early 362. In this, Julian depicts Helios asking him what he thinks of his cousin's shepherds and herdsmen, in other words, of Constantius II's senior appointees, and when Julian replies that they are destroying the flocks, Helios reveals that he intends to set Julian in his cousin's place to remedy this situation (*Against Heraclius* 232a-c). So it is by his appointment of Julian as emperor in particular that Sol guarantees the security of his herds, the state.

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AN 'ABBASID REVOLUTION HOARD FROM THE WESTERN JAZIRA (AL-RAQQA?)

(PLATE 26)

STUART D. SEARS *

A hoard of mainly Umayyad dirhams appeared in northern Syria in February of 1991.¹ A knowledgeable collector fortunately recorded the mints and dates of what seems to have been all the coins before their dispersal. This information may now prove useful to scholars reconstructing patterns in the production, regulation, and circulation of money during the late Umayyad and early 'Abbāsid caliphates. Two features stand out. With dates ranging from AH 79 to 133 (CE 698 to 750), it seems to be yet another find of coins from the period of the 'Abbāsid revolution. The hoard also, remarkably, contained over a thousand Reformed but no Sasanian-style coins.

The hoard is important since it comprises, together with other hoards, tangible evidence of the disruption caused by a late Umayyad dynastic conflict and the 'Abbāsid revolution. Hoards of silver and gold coins from this period are relatively common, though their frequency has not yet been generally noted. They form nearly half of all Near Eastern finds known for the second century AH (eighth and early ninth centuries CE). The finds seem to be “war hoards”, that is,

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¹ I mentioned and briefly discussed this hoard in Sears (1994:134–136).

quantities of coins buried in an atmosphere of military crisis but never subsequently recovered by their owners.

The all-dirham character of this hoard challenges many widely held assumptions about the circulation of late Sasanian and early Muslim coinages. Many scholars have assumed or argued that the Muslim conquests in the middle of the seventh century, and especially the Umayyad caliph 'Abd al-Malik's monetary reforms at the end of the seventh century CE, unified the monetary zones of the Near East, bringing about the generally uninhibited circulation of coinages throughout North Africa and the Near East (Grierson 1960; Ehrenkreutz 1970).² While dirhams certainly circulated widely, the hoard documented here raises questions about whether drahms ever circulated as specie in North Africa and greater Syria.

The two silver coinages, drahms and dirhams, differ fundamentally in design and weight. Drahms present the bust of a Sasanian monarch on the obverse and a Zoroastrian fire altar flanked by two attendants on the reverse.³ They were struck at the "weight of ten" or at the full weight of a *mithqāl*.⁴ The Sasanians and then the Muslims struck these coins in Iraq and Iran until the end of the first century AH (the early eighth century CE). Dirhams, in contrast, bear no portraits or pictures in their fields but only Arabic legends. The obverse field gives a version of the Muslim declaration of faith, the *shahāda*: "There is no god but God alone. He has no partner." The reverse field gives an excerpt from the *sūrat al-Ikhlāṣ*. They are also lighter than the drahms, weighing a theoretical "weight of seven", which is to say seven-tenths the weight of the *mithqāl* (Miles 1965). The Umayyad caliph 'Abd al-Malik introduced these coins as the standard silver currency throughout North

² Cahen questioned the concept of a single monetary zone (1980). He later questioned more precisely the fate of the old money after 'Abd al-Malik's reforms. He wondered in particular, after the example of Italy, whether the old and new coins circulated at two different rates (1982:61–64). In the most recent work on this subject, Heidemann (1998) has argued in support of monetary unification under the Muslims. While he has noted an influx of coins, he is unable to show that the coins circulated as specie.

³ For Sasanian drahms see Göbl (1971); for early Muslim drahms see Walker (1941).

⁴ For discussion of metrology, see Miles (1965).

Africa and the Near East at the very end of the seventh century CE (Grierson 1960; Bates 1986).

The collector who examined the hoard found it in the shop of an antiquities dealer in Hama, Syria. On the basis of information he obtained from the dealer and the evidence of the hoard itself, it was most probably recovered in what would historically have been the western Jazīra. The dealer claimed that the hoard had been recovered only a few weeks before at al-Raqqā. Dealers often hazard guesses about the provenance of antiquities in the absence of precise information. Any place in northern Syria could thus plausibly have been the recovery site. The seemingly complete and unsorted condition of the hoard at the time of its examination, however, would support the dealer's statements. Most coins were dirty or encrusted with mineral deposits and in many cases still attached to each other. Some rare and valuable issues were also included. If the hoard had traveled any great distance, more knowledgeable dealers and collectors would likely have cleaned or picked through it. The latest issues in this hoard also point to the Jazīra. The terminal date, AH 133, is provided by two Khārijite dirhams struck at the as-yet-unlocated mint which we will call *Baybard?*⁵ The penultimate date of AH 132, however, appeared on two coins from the mint named *al-Jazīra*, believed to have been situated at Ḥarrān.⁶ The hoard was then probably assembled in this province.

⁵ The reading of the mint name is not certain. Wurtzel read *tanbūk?* with hesitation (1978:176–178 no. 29, 186). The collector who examined this specimen read *Baybird?*. Whatever the reading, the mint was Khārijite, as demonstrated by its legend *lā ḥukm illā lillāh*. The sphere of activity of the Khārijites was usually centered in Iran. This mint, however, was probably in the Jazīra, given the recovery site of the hoard.

⁶ Walker identified this mint with Jazīrat Ibn ‘Umar (1956:lxvii) but, because Ḥarrān became Marwān II's capital during the last few years of the Umayyad caliphate, for which this mint is most common and no others are attested, Bates preferred an attribution to the provincial capital at Ḥarrān (1989:91). The chronologies of the mints at Ḥarrān and al-Jazīra support this attribution. They alternate during the late Umayyad period without overlapping (Walker 1956:lxvii, 131–132, 138; Shams-Eshragh 1990:150–155).

Circumstantial evidence rules out any more distant findspot than the western or Syrian Jazīra. Aleppo and Damascus would most likely have received and handled hoards from points outside of Syria. Their markets are far larger and located closer to Syria's borders than those of Hama. Damascus would have probably handled any coin finds from southern Syria, given its location. The Gulf War during the winter of 1991, furthermore, interrupted most inter-state trade in the region, greatly reducing cross-border traffic with Jordan and Turkey. The border with Iraq remained closed during and after the conflict.

The hoard contained 1187 dirhams, making it one of the largest dirham hoards ever found in Syria. Although antiquities dealers often separate lots of coins by types before presenting them for sale, the absence of drahms seems in this case genuine. Not only did the dealer deny the existence of drahms but the collector who examined the hoard pulled apart many encrusted coins himself without finding any. No Sasanian or Muslim drahms, moreover, appeared in Syria during this time bearing similar patterns of encrustation and damage.

The hoard contained coins of thirty-eight mints ranging from al-Andalus to Sijistān (Figure 1), including the newly attested mint legends Madinat Bahurasīr (Plate 26 no. 1) and Bardashīr (Plate 26 no. 2).⁷ Most of the coins, however, came from Damascus and Wāsiṭ and, to a lesser extent, al-Baṣra and al-Kūfa. The identity and location of the mints of Madinat Bahurasīr and Bardashīr are reasonably certain. The mint Madinat Bahurasīr is most likely the precursor to the very rare mint of Bahurasīr (Walker 1956:296). *Bahurasīr* is a corruption of *Veh-Ardashīr*, the former capital of the Seleucids and later one of the capital cities of the Sasanians in central Iraq (Le Strange 1966:34, 35). *Bardashīr* is similarly a corruption of the name *Veh-Ardashīr* but was located in northern Kirmān. Bardashīr is attested in later geographies, though the city became known by the province's name *Kirmān* (Le Strange 1966:299–300). The very rare date of AH 84 was, in addition, tentatively attested for the mint Jūr, located at Ardashīr-Khurra in Fārs.⁸

⁷ These mints are not listed in Walker (1956) or in Shams-Eshragh (1990:150–155).

⁸ This date is listed but not illustrated in Shams-Eshragh (1990:150–155).

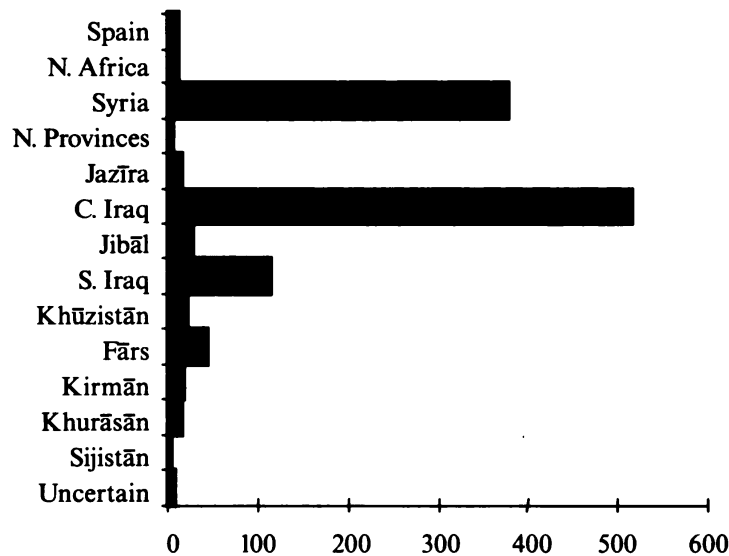


FIGURE 1. Distribution of mints

The distribution of mints and dates in the hoard was as follows:

Spain (12 coins)

al-Andalus (Walker 1956:lxixii–lxixiii), 12: 104, 105, 106, 107, 108, 110 (2), 111, 112, 114 (2), 119

North Africa (11 coins)

Ifriqīya (Walker 1956:lxixii), 11: 102 (2) 105, 111, 112, 113 (5), 114

Syria (377 coins)

Dimashq (Walker 1956:lxixii), 377: 79 (5), 80 (7), 81 (11), 82 (14), 83 (15), 84 (8), 85 (3), 89 (12), 90, 91 (20), 94 (21), 96 (29), 97 (18), 98 (5), 99 (13), 100 (27), 104 (12), 107 (10), 110 (2), 113 (3), 114 (14), 115 (2), 118, 119 (22), 120 (24), 121 (21), 122 (12), 125 (17), 126 (18), 128 (7), 131 (3)

Jazīra (15 coins)

al-Jazīra (see note 6), 15: 127 (3), 128, 129 (4), 130 (3), 131 (2), 132 (2)

Northern Provinces (6 coins)

Adharbayjān (Walker 1956:lxixi), 3: 105 (2), 106

al-Bāb (Walker 1956:lxixiii), 3: 119, 124, 125

Central Iraq (516 coins)

Madīnat Bahurasīr (see discussion above), 1: 79

al-Kūfa (Walker 1956:lxxxvii), 92: 80 (8), 81 (4), 82 (14), 100 (21), 101 (22), 102 (18), 128 (5)⁹

Wāsiṭ (Walker 1956:xcii), 423: 85 (3), 86 (5), 87 (8), 88 (2), 90 (15), 91 (17), 92 (18), 93 (12), 94 (20), 95 (11), 96 (10), 97 (17), 98 (22), 99 (11), 105 (4), 107 (7), 108 (10), 110 (3), 111 (24), 112 (12), 113 (8), 115 (3), 118 (12), 120 (23), 121 (14), 122 (17), 123 (12), 124 (14), 125 (19), 126 (18), 127 (15), 128 (10), 129 (8), 130 (7), 131 (12)

Jibāl (27 coins)

Māhay,¹⁰ 9: 90, 91 (2), 92, 93, 96, 97 (2), 129

al-Rayy (Walker 1956:lxxx), 5: 90, 94, 97 (2), 98

Dastawā,¹¹ 3: 92, 95, 96

Jayy (Walker 1956:lxxvii), 4: 80, 81, 96 (2)

Shaqq al-Taymara,¹² 1: 81

Taymara,¹³ 5: 95 (2), 96, 97 (2)

Southern Iraq (113 coins)

al-Baṣra (Walker 1956:lxxiv), 102: 79 (5), 80 (12), 81 (16), 82 (18), 100 (29), 101 (22)

al-Furāt (Walker 1956:lxxxii), 1: 95

Sāmiya,¹⁴ 10: 131 (10)

Khūzistān (21 coins)

al-Sūs (Walker 1956:lxxxii), 2: 90 (2)

Nahr-Tirā (Walker 1956:xc), 2: 93, 95

Surraq (Walker 1956:lxxxi), 3: 90 (2), 93

Sūq al-Ahwāz (Walker 1956:lxxxii), 11: 80, 81, 83, 90 (2), 94 (4), 95, 98

Manādhir (Walker 1956:xc), 1: 93

Jundī-Sābūr (Walker 1956:lxxvii), 2: 91, 92

⁹ At least three of these were Khārijite issues.

¹⁰ This is most likely to be identified with a site in western Jibāl (Walker 1956:lxxxviii; Bates 1987).

¹¹ This was a district usually attached to al-Rayy (Walker 1956:lxxix).

¹² This was a division in the district of Isfahān, the other comprising Jayy (Walker 1956:lxxvi).

¹³ This is a shortened form of the name of Shaqq al-Taymara (Walker 1956:lxxvi).

¹⁴ This was located on the Shaṭṭ al-ʿArab waterway (Walker 1956:lxxx; Bates 1987).

Fārs (44 coins)

Ardashīr-Khurra (Walker 1956:lxix), 9: 91, 95 (3), 96, 97 (2), 98 (2)

Jūr?¹⁵ (Walker 1956:lxix, lxxvii), 1: 84

Fasā (Walker 1956:lxxxv), 1: 81

Iṣṭakhr (Walker 1956:lxix), 19: 84, 90 (2), 92, 93, 94 (5), 95 (2), 96, 97 (2), 98 (2), 102 (2)

Dārābjird (Walker 1956:lxxviii–lxxix), 14: 79, 90 (2), 91 (2), 92 (4), 94, 95 (2), 96 (2)

Kirmān (17 coins)

Kirmān (Walker 1956:lxxxvii), 16: 93 (2), 94, 97 (3), 98 (2), 101, 103 (6), 129

Bārdashīr (see discussion above), 1: 79

Khurāsān (16 coins)

Abarshahr (Walker 1956:lxix), 2: 90, 92

Sarakhs,¹⁶ 2: 92, 95

Marw (Walker 1956:lxxxix), 10: 83, 91 (3), 93 (3), 96 (2), 99

Harāt (Walker 1956:xci), 2: 93, 99

Sijistān (4 coins)

Sijistān,¹⁷ 4: 90 (3), 130

Uncertain mints (8 coins)

Baybard? (see note 5), 2: 133 (2)

al-Mubāraka¹⁸ (6): 108, 109, 110, 118 (3)

Note: The weights of the coins were not recorded since the dirhams were generally heavily corroded.

¹⁵ The collector was unsure about this reading.

¹⁶ This town was located about halfway between Nishāpūr (Abarshahr) and Merv (Walker 1956:lxxxix).

¹⁷ This represented the main provincial mint probably located in Zarang, the capital of Sijistān. The mint name *Zaranj*, however, is also briefly attested during this period, so the Sijistān mint may not have been located in the capital or may have moved from Zaranj to some other location prior to the start of the Zaranj issues (Walker 1956:lxxxix, lxxx).

¹⁸ Al-Mubāraka may be an epithet for Balkh as has been suggested, but the epithet was applied to other cities too (Walker 1956:lxxxviii; DeShazo and Bates 1974:117 n. 26; Bates 1987).

The coins seem to comprise an emergency hoard, that is, they were chosen quickly from circulation in response to a sudden crisis.¹⁹ This pattern of hoarding may vary to some extent depending on the precise intentions of the hoarder, the nature of the crisis, and the time available to form and dispose of the hoard. The hoard may be called a “war hoard” since a military threat probably precipitated this crisis. The hoard shows a wide distribution of mints and dates not unlike other contemporary accidental losses and hoards.²⁰ It not only contains mints as far apart as Sijistān and al-Andalus but has relatively recent issues from each of these mints. The latest issue of al-Andalus was AH 119. More notably, the latest issues of Sijistān and Kirmān were AH 129 and 130 respectively, just a few years before the terminal date of the hoard. No more recent coins are known for the last two mints for the Umayyad period (Shams-Eshragh 1990:150–155).²¹

Some anomalies, nevertheless, exist in the hoard’s composition, suggesting some complexities in the circumstances of its collection. A large number of the coins were struck between AH 79 and 102 relative to later issues (Figure 2). Approximately 60% of the hoard was struck in AH 102 or earlier; 40% was struck after AH 102. This feature appears to be distinctive of the Umayyad dirham portions of most Jazīra hoards, though no contemporary hoards from this region are known and later hoards comprise savings or bullion hoards.²² The Qamishliya hoard of AH 200 shows proportions of 58% and 42%

¹⁹ For general discussion of the diverse circumstances under which hoards may be collected and concealed, see Grierson (1975:124–139).

²⁰ Near Fez, Morocco (AH 133; *Coin Hoards* 4:68 no. 215; Gyselen and Kalus 1983:66, notes); Volubilis, Morocco (AH 101; Eustache 1956:133–197); En Nebk, Syria (AH 130; *Coin Hoards* 3:98 no. 257; Gyselen and Kalus 1983:66, notes); Nippur, Iraq (AH 126; Sears 1994:133–146); Godhlāniya, Syria (AH 119, *Coin Hoards* 2:96 no. 364; Gyselen and Kalus 1983:66, notes). The better known Bāb Tūmā hoard (AH 130, Gyselen and Kalus 1983:19–28) and the Taḥrīr Square hoard (AH 131; al-‘Ush 1972a) of Damascus appear to be savings hoards. See discussion below.

²¹ Bates, nevertheless, has communicated to me unconfirmed reports of AH 131 and 132 for Sijistān.

²² The Qamishliya hoard (Gyselen and Kalus 1983:29–59, 100–140) and the Jazīra hoard (Gyselen and Nègre 1982:194–195). The Umm al-Ḥajara hoard in al-‘Ush (1972b) has too few dirhams to be useful for comparison.

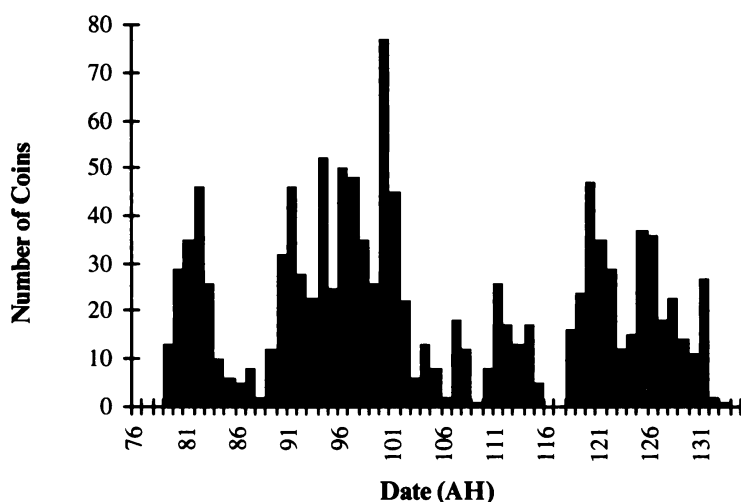


FIGURE 2. Distribution of dates

(Gyselen and Kalus 1983:36). The Jazīra hoard of AH 205 has proportions of 54% and 36% (Gyselen and Nègre 1982:194–195).

These proportions differ considerably from those of contemporary hoards outside of the Jazīra, whether accidental losses, emergency hoards, or savings hoards. About 22% of the dirham portion of the Taḥrīr Square hoard of Damascus was struck in AH 102 or earlier and 78% later (al-‘Ush 1972a:215–297). The reconstructed proportions of the Bāb Tūmā hoard would be very similar; all dirhams struck at mints other than Damascus and Wāsiṭ in this hoard appear to have been removed after its recovery.²³ In the Nippur hoard of AH 126

²³ The absence of all mints other than Damascus and Wāsiṭ, as noted by Heide-mann (1998:101 n. 94), is probably the result of their careful removal by a coin dealer or knowledgeable collector after the hoard’s recovery. Because specimens of these mints are rarer than Damascus and Wāsiṭ, they normally command a slight premium in the antiquities market. The original proportions of the hoard can under these circumstances be reconstructed generally. Issues of Damascus and Wāsiṭ consistently comprise the bulk of the Umayyad dirhams in any hoard. About 17% of the Umayyad dirhams recovered from the Bāb Tūmā hoard were struck in or before AH 102. This is slightly greater than the same chronological selection of Damascus and Wāsiṭ dirhams in the Taḥrīr Square hoard. The original proportion among all dirhams in the Bāb Tūmā hoard, consequently, must have been somewhat

only 45% of the Umayyad dirhams were struck in or before AH 102, although its terminal date falls short of the very end of the Umayyad period (Sears 1994). Other contemporary hoards are too incompletely documented for comparison.²⁴

An exceptionally large number of the coins, moreover, come from al-Baṣra and al-Kūfa. The coins of these mints constitute about 9% and 8% of the hoard respectively. In contrast, later Jazīra hoards have only around 4% and 1% respectively for the two mints (Gyselen and Kalus 1983:36; Gyselen and Nègre 1982:194–195).²⁵ The contemporary Taḥrīr Square hoard from Damascus has about 2% and 1% (al-'Ush 1972a:1, 238–239, 272–274).²⁶ The anomaly, in fact, lies primarily in the frequency of the Baṣran and Kūfan issues of AH 100 to 102. Approximately one-half to two-thirds of the coins of these mints in the hoard were struck between these dates. This sort of anomaly is not unknown in other hoards. A relatively high number of coins in the Nippur hoard of AH 126 were struck between AH 105 and 114 compared to other contemporary hoards and a later hoard of Nippur (Sears 1994:134–137).

The hoard may thus not be a perfect sample of circulating coinage yet, with its idiosyncrasies, may approximate perfectly well the manner in which coinage actually circulated in the Jazīra. The anomalies mentioned above may reflect a combination of bags of coins collected from circulating coinage at different times and in different places. A small parcel of coins collected in Iraq in AH 102, for example, may have been added to a larger parcel of coins collected in the Jazīra in AH 133. The dates of AH 100 to 102 are significant since they correspond to the temporary closure of the mint at Wāsiṭ. Coins collected in Iraq in AH 102, consequently, would probably have contained a rela-

higher, perhaps around 25% (Gyselen and Kalus 1983:19–28, 82–99; al-'Ush 1972a:248–259, 284–297).

²⁴ Near Fez, Morocco (AH 133; *Coin Hoards* 4:68 no. 215; Gyselen and Kalus, 1983:66, notes); En Nebk, Syria (AH 130; *Coin Hoards* 3:98 no. 257); Middle East (AH 128; *Coin Hoards* 1:72 no. 265; Gyselen and Kalus 1983:66, notes).

²⁵ The Umm al-Ḥajara hoard in al-'Ush (1972b) has too few dirhams to be useful for comparison.

²⁶ These mints were removed from the Bāb Tūmā hoard before its examination (Gyselen and Kalus 1983:19–28, 82–99, see n. 61).

tively large proportion of specimens from al-Baṣra and al-Kūfa in comparison to those from Wāsiṭ and other mints. The addition of this smaller collection to a much larger and later collection from the Jazīra would have yielded a hoard similar in composition to the one described here.

In view of the hoard's terminal date of AH 133, its owner probably collected it shortly after the 'Abbāsīd advance into Syria a year earlier. The large size of the hoard suggests that it belonged to someone of reasonably substantial wealth. Such a large hoard probably was not lost accidentally. It is difficult beyond this to speculate about who lost the hoard or why it was lost. The specific context of the find is unknown. The presence of some Khārījite issues probably only indicates that Khārījite coins circulated in the Jazīra at this time in small quantities.²⁷

The hoard joins an increasing number of Near Eastern hoards collected between AH 125 and 133. These dates span the struggle among the last Marwānīd caliphs of the Umayyad dynasty and the 'Abbāsīd revolution and its immediate aftermath. Most but perhaps not all of these are tied to the turmoil of military conflict. The hoards come primarily from Palestine, Syria, and the western Jazīra but are known as far apart as Morocco and Iraq. They contain variously dinars, drahms, and dirhams.

Two groups of hoards from this period may be established. The earlier group of hoards all have terminal dates between AH 125 and 126 / CE 742 to 743. Three Umayyad caliphs ruled in quick and for the most part violent succession during these years: al-Walīd II, Yazīd III, and Ibrāhīm. Stability did not return until after the accession of Marwān II in AH 127 / CE 744. There are four known hoards in this group:

1. Capernaum, Palestine (Wilson 1989): AH 126, dinars
2. Lajjūn, Palestine (Mayer 1934): AH 125, dinars
3. Damascus, Syria (Touier 1966): AH 125, dinars
4. Nippur, Iraq (Sears 1994): AH 126, drahms and dirhams

The second group, to which the present hoard belongs, has terminal dates between AH 130 / CE 748 and AH 133 / CE 751. 'Abbāsīd

²⁷ For Khārījite and other revolutionary issues, see Wurtzel (1978).

armies marched during this period from Khurāsān to Iraq, and then into Syria and North Africa, eliminating the Umayyad dynasty and establishing a new one in its place. Six hoards belong to this group:

5. Near Fez, Morocco (*Coin Hoards* 4:68 no. 215; Gyselen and Kalus 1983:66): AH 133, dirhams

6. Damascus (Bāb Tūmā), Syria (Gyselen and Kalus 1983:19–28, 82–99): AH 130, drahms and dirhams

7. Damascus (Taḥrīr Square), Syria (al-'Ush 1972a): AH 131, drahms and dirhams

8. En Nebk, Syria (*Coin Hoards* 3:98 no. 257): AH 130, dirhams

9. Mukhardiq, near Hama, Syria (*Coin Hoards* 3:98 no. 258): AH 132, dinars

10. Western Jazīra (al-Raqqā?): AH 133, dirhams

A number of other hoards may belong to one or the other of the chronological clusters but are incompletely documented. A hoard recovered at Jerash contained 1175 Umayyad dirhams but can only be certainly dated to sometime before AH 133 / CE 750 to 751 (Treadwell 1994). Some dinar hoards, similarly, are known to have come from the second century AH / eighth century CE but have little additional documentation.²⁸

A dirham hoard of AH 128, similarly, falls generally in this period but outside the two chronological groups. Its evidence is poorly recorded; its provenance is only generally the Middle East (*Coin Hoards* 1:72 no. 265; Gyselen and Kalus 1983:66, notes).

The two groups of hoards are tied to the military crises of this period primarily through the combined evidence of their provenances and terminal dates. Most of the hoards come from greater Syria. Some 80% were recovered in Palestine, Syria, or the western Jazīra in contrast to approximately a third of other hoards of the second

²⁸ Al-Rastān, Syria (eighth century CE; *Coin Hoards* 2:97 no. 367; Gyselen and Kalus 1983:66, notes); between Homs and Ma'arra, Syria (eighth century CE; *Coin Hoards* 1:72 no. 268; Gyselen and Kalus 1983:66, notes); Ma'arra, Syria (eighth century CE; *Coin Hoards* 2:97 no. 365; Gyselen and Kalus 1983:66, notes); Talmis or Tarmis?, Syria (eighth century CE; *Coin Hoards* 3:98 no. 260; Gyselen and Kalus 1983:66, notes).

century AH / eighth and early ninth centuries CE.²⁹ Syria was the main site of the dynastic struggles among the last Umayyad caliphs and, ultimately, the target of the 'Abbāsīd military advance. Damascus was the Umayyad capital. The main supporters of the Umayyad dynasty lived throughout this region.

The unusual clusters of terminal dates are also significant. The eight-year span of dates subsumes approximately 40% of the twenty-five or so precious metal hoards dated precisely to the second century AH / eighth and early ninth centuries CE.³⁰ The dates of the hoards, as noted above, correspond exactly with these conflicts, though AH 133 represents the aftermath of the 'Abbāsīd revolution.

A small number of the hoards may be unrelated to these particular crises. They may be hoards of "old coins" collected and interred sometime after the 'Abbāsīd revolution.³¹ The terminal dates of AH 130 to

²⁹ This is based on hoards of gold or silver—not coppers. The other hoards include 1) Volubilis, Morocco (AH 101), dirhams (Eustache 1956); 2) Damascus (AH 103), dinars (al-'Ush 1954–55); 3) Godhlāniya, Syria (AH 119), dirhams (*Coin Hoards* 2:96 no. 364; Gyselen and Kalus 1983:66, notes); 4) Denizbaci, Turkey (AH 196), drahms and dirhams, (Artuk 1966; Gyselen and Kalus 1983:69; Heidemann 1998:100 n. 76); 5) Southeast Turkey (approximately AH 200) (Gyselen and Kalus 1983:68); 6) Umm al-Ḥajara (AH 193 but with one Seljuq coin of AH 689 or 690), drahms and dirhams (al-'Ush 1972b); 7) Qamishliya (AH 200), drahms and dirhams (Gyselen and Kalus 1983:29–59, 100–140); 8) Zākhu (after AH 193), drahms and dirhams (al-Naqshbandi 1949–54; Gyselen and Kalus 1983:67–68); 9) Kūfa (AH 193), drahms and dirhams (*Coin Hoards* 2, no. 369; Noonan 1980:467–468 no. 5; Gyselen and Kalus 1983:67); 10) 'Utayfiya, Iraq (AH 193), dirhams (al-Bakrī 1973; Gyselen and Kalus 1983:69); 11) Abū Sā'ida, Iraq (AH 103), dinars (*Coin Hoards* 1:72 no. 264); 12) Nippur, Iraq (AH 177) (Bates 1978; Gyselen and Kalus 1983:69); 13) al-Khobar (AH 168), drahms and dirhams (*Coin Hoards* 1, no. 269; Noonan 1980:441 Table XX, 465 no. 1; Gyselen and Kalus 1983:66–67); 14) Mashad, Iran (AH 115), dirhams (Hébert 1966; Gyselen and Kalus 1983:66, notes); 15) Marv (AH 199), drahms and dirhams (Khodzhanizov and Treadwell 1998); 16) Afghanistan (AH 112), dirhams (Album 1971; Gyselen and Kalus 1983:66 notes); 17) Middle East (AH 128), dirhams (*Coin Hoards* 6, no. 271; Gyselen and Kalus 1983:68).

³⁰ See note 29.

³¹ Grierson's treatment of hoards is intended to convey a general idea about the circumstances in which hoards may be formed. It omits consideration, consequently, of many deviations from these general circumstances (Grierson 1975:132–135). Hoarders, for example, may prefer to collect worn demonetized coins in times of emergency since the value of these coins will be more stable than current coins, which

133 mark not only the approximate dates of the 'Abbāsīd revolution but the boundary between Umayyad and 'Abbāsīd coin types. The epigraphic styles of these types are easily distinguished. Money handlers may thus have removed the older Umayyad dirhams from circulation many years after AH 133 as they became demonetized. This practice may be confirmed in part by early 'Abbāsīd hoards. The hoards contain only small quantities of Umayyad dirhams, if any, though they were in many cases collected only a few decades after the 'Abbāsīd revolution.³² Modern antiquities dealers similarly often remove 'Abbāsīd pieces from mixed lots as the different coin series command different prices.

The two Damascus (Bāb Tūmā and Taḥrīr Square) hoards, in fact, resemble hoards of "old coins". They contain two very different coin types. The Sasanian drahms in these hoards are very old compared to the later Umayyad dirhams, yet also very numerous. The standards of weight and to some extent fineness of these coins, and their marks of control, differ significantly from those of dirhams. The circulation of the two coin types together as specie would pose many problems to those using them. The two coin types, more importantly, occur in vastly different proportions. The Bāb Tūmā hoard has approximately 91% drahms and 9% dirhams while the Taḥrīr Square hoard has approximately 38% drahms and 62% dirhams (Gyselen and Kalus 1983:19–29; al-'Ush 1972a). Such a difference would not normally occur in circulating specie collected in the same place and at the same time.³³ One could argue that the published portions of these hoards are

may become suddenly demonetized. The hoards characterized here as savings or bullion hoards thus do not have the choicest specimens of the coinage of this period but generally the older and more inferior pieces.

³² See, for example, hoards of Denizbaci, Turkey (AH 196) (Artuk 1966; Gyselen and Kalus 1983:69); 'Utayfiya, Iraq (AH 193) (al-Bakrī 1973; Gyselen and Kalus 1983:69); and Nippur, Iraq (AH 177) (Bates 1978; Gyselen and Kalus 1983:69).

³³ Heidemann, nevertheless, has argued in favor of this possibility, claiming that many factors affect the composition of any sample of circulating specie such as its origin and its particular use as local or long-distance money (1998:95–112, especially n. 95). The strong regional and chronological similarities in the composition of Near Eastern hoards, some of which have been mentioned here, however, would cast doubt on these claims in this instance.

not fully representative of the original proportions.³⁴ Yet, while acknowledging the disappearance of some coins, the scholars publishing these hoards firmly claim that the hoards are more or less intact (Gyselen and Kalus 1983:19; al-'Ush 1972a:1). This testimony would seem to be corroborated by their similar proportions of early versus later dirhams as discussed above.

Most of the war hoards mentioned here, however, are probably authentic. The first group of hoards dating to AH 124 to 126 could not have reasonably been culled from any larger group of coins. The coins in these hoards differ only slightly in epigraphic style from the subsequent Umayyad issues of AH 127 to 132. No reason existed for separating them from the later coins. Any such attempt would have been tedious, relying for the most part on reading the dates themselves. The slightly later hoards of AH 130 to 133 are probably also generally authentic collections of this period. The number of hoards dated to this interval corresponds with what one would reasonably expect to have been recovered. If four hoards have been recovered for the late Umayyad dynastic struggle of AH 124 to 127, then the same number or more should have been recovered for the 'Abbāsid revolution, given its more violent character and the wider scope of its upheaval. The predominant Syrian provenance of these hoards, moreover, corresponds with the region where the 'Abbāsid revolution could reasonably be expected to have wrought the most disruption and thus the greatest loss of hoards.

The generally large size of the war hoards may reflect not only the wealth of their owners but their political affiliations too. Most of the owners were probably men of at least moderate wealth. It is possible they were connected to the ruling circles in Syria as wealthy persons ordinarily would be. In the event of first the dynastic conflict among the Umayyads and then the revolt and conquest by the 'Abbāsids, they lost this wealth and perhaps their lives.

The Western Jazīra hoard also joins a growing list of Near Eastern hoards consisting solely of dirhams. These hoards date to the second

³⁴ Although he argues that dirhams of mints other than Wāsiṭ and Damascus were removed, Heidemann believes the remaining portions of the hoards are generally intact (1998:101 n. 94).

century AH / eighth and early ninth centuries CE. The all-dirham character of these hoards is important. It offers evidence that dirhams and drahms circulated separately in Syria and perhaps other places in the Near East. There are more than ten such hoards documented, including the present one.³⁵

1. Near Fez, Morocco (*Coin Hoards* 4:68 no. 215; Gyselen and Kalus 1983:66, notes; now in ANS): AH 133
2. Volubilis, Morocco (Eustache 1956): AH 101
3. Jerash, Jordan (Treadwell 1994): before AH 133
4. En Nebk, Syria (*Coin Hoards* 3:98 no. 257; Gyselen and Kalus 1983:66, notes): AH 130
5. Godhlāniya, Syria (*Coin Hoards* 2:96 no. 364; Gyselen and Kalus 1983:66, notes): AH 119
6. Western Jazīra (al-Raqqā?): AH 133
7. 'Utayfiya, Iraq (al-Bakrī 1973; Gyselen and Kalus 1983:69): AH 193
8. Nippur, Iraq (Bates 1978; Gyselen and Kalus 1983:69): AH 177
9. Mashad, Iran (Hébert 1966; Gyselen and Kalus 1983:66, notes): AH 115
10. Afghanistan (Album 1971; Gyselen and Kalus 1983:66, notes): AH 112
11. Middle East (*Coin Hoards* 1:72 no. 265; Gyselen and Kalus 1983:66, notes): AH 128

While the documentation of these hoards is not always complete or reliable, the all-dirham character of at least some of them is genuine. Hoards 2 and 8 were recovered in archaeological contexts. The present hoard, no. 6, was examined under circumstances leading one to believe that it was intact. The published description of hoard 7 seems reliable. Though the accounts of most of the remaining hoards are not beyond suspicion, they lend credibility to the phenomenon by their frequency. The descriptions of hoards 9, 10, and 11, at the same time, are most likely incomplete or altogether open to question. They appeared in

³⁵ Artuk published only the dirhams of the hoard of Denizbaci, Turkey (AH 196), though it contained almost 3000 other (mainly Sasanian) coins. Gyselen and Kalus mistakenly referred to the hoard as consisting solely of dirhams (1983:69; see Heide-mann 1998:100 n. 76).

antiquities markets with little information about their provenance or original composition.

Wastage of drahms cannot account for the homogenous character of the all-dirham hoards. While many years had elapsed since c. 630 CE when the Sasanians last struck significant quantities of drahms and while the Muslims struck relatively few coins until around 80 AH / CE 700, mixed hoards of drahms and dirhams occur regularly until the early third century AH / ninth century CE (Gyselen and Kalus 1983:64–69). Drahms, consequently, were potentially available to those forming the all-dirham hoards.

The collection of old dirhams for savings or bullion also cannot explain the homogenous composition of these hoards. In order for coins to be demonetized, some new coins must circulate in a manner which clearly distinguishes them from previous coins. Some alteration in the coin type usually serves this purpose, not simply changes in the content of legends or control marks. The dates of the introduction of new coin types, consequently, often become the terminal dates of savings hoards. The all-dirham hoards should reasonably consist of only Umayyad dirhams or of mainly early 'Abbāsid dirhams had they been drawn from a stock of coins demonetized in the early 'Abbāsid caliphate. The terminal dates of these hoards, however, do not generally correspond with the dates of monetary reforms. Aside from the reforms immediately after the 'Abbāsid revolution, no new set of measures introduced any significant changes in the dirham type until approximately AH 206 (El-Hibri 1993:62–64).³⁶ Arguments have already been given for the integrity of most of the hoards of AH 126 to 133 as emergency hoards. Most of the remaining hoards, on the basis of their terminal dates, are too early or too late to be savings or bullion hoards.

The preponderance of 'Abbāsid over Umayyad dirhams in the 'Abbāsid hoards is an important but unexplained statistical phenomenon. The later hoards overwhelmingly comprise 'Abbāsid dirhams,

³⁶ Progressive changes in the organization of the type are noted by El-Hibri before and after this date (1993:62–64). He, however, characterizes the introduction of a new script style in this year as a “watershed”. The new script style provided an immediate and obvious basis for the discrimination of earlier and later coins.

though they were formed only a few decades after the 'Abbāsīd revolution. In hoard 7, collected in AH 193, all of the 294 dirhams were 'Abbāsīd except one Umayyad piece. In hoard 8, formed in AH 177, 'Abbāsīd dirhams were 88% of the coins and Umayyad dirhams 11%. The Umayyad dirhams seem to have been selectively but incompletely removed.

The evidence then suggests that, while dirhams circulated as specie in Umayyad Syria and North Africa, drahms did not. All accidental losses and emergency hoards from lands west of the Jazīra consist only of dirhams. The few mixed hoards from these lands seem to be savings or bullion hoards.³⁷ The record of stray finds confirms this picture. The finds generally consist of dirhams. Drahms are very infrequently found. In Palestine, no significant difference can be detected in the numbers of drahms found before and after the Muslim conquest.³⁸

The antipathy toward drahms in North Africa, Syria, Anatolia, and the western Jazīra was most likely rooted in long-standing monetary traditions. These lands had maintained a gold standard under the Byzantines and the first generations of Muslims. The drachm was not only a foreign coin but also a non-standard metal. Muslim mints in the Levant and North Africa struck drahms only very briefly in trivial quantities at Damascus and Ḥimṣ.³⁹

The preference for dirhams over drahms may have gradually extended into the former Sasanian lands of eastern Arabia, Iraq, and Iran during the early 'Abbāsīd caliphate. Hoards of the late Umayyad and the very early 'Abbāsīd period still document the joint use of drahms and dirhams. The Nippur hoard of AH 126 (Sears 1994) and the al-Khobar hoard of AH 168 (*Coin Hoards* 1:72 no. 269; Noonan, 1980:441 table XX, 465 no. 1; Gyselen and Kalus, 1983:66–67)⁴⁰ have

³⁷ Gyselen and Kalus tied many of these hoards to long-distance trade with eastern Europe (1983:61–76, especially Figure 53 on p. 69).

³⁸ For a survey of all known finds of drahms in historical Palestine, see Sears and Ariel (2001).

³⁹ For Damascus issues, see Walker (1941:23, 25, nos. N.1, D.D.1, Zub.1); Gaube (1973:tafel 14 nos. 2.2.2.2, 2.3.2.2). For Ḥimṣ, the single known specimen is in the Shamma collection at the Ashmolean Museum.

⁴⁰ It is possible that hoards such as al-Khobar were treated as bullion. Historical accounts claim that silver coins whatever their origin were exchanged as bullion in

both drahms and dirhams. They represent accidental losses or emergency hoards from Iraq and eastern Arabia respectively. Later hoards from these regions, in contrast, contain for the most part only dirhams. The later mixed hoards from these regions appear to have been collected as savings or sources of bullion. They are large and comprise many different issues in uneven proportions. Sasanian-style coins, in fact, continued to be struck in northern and eastern Iran in the second century AH / eighth century CE but evolved into specialized local or trade coinages which were never intended to circulate with dirhams.⁴¹

The dearth of Umayyad dirhams in early 'Abbāsid hoards reflects a separate phenomenon. It may point to the drain of silver to other regions of the Near East or central Eurasia. Older demonetized issues would naturally be more sensitive than newer issues to this sort of export. 'Abbāsid mints, on the other hand, may have simply produced more coins than ever before. To settle this question, more information about the relative output of Umayyad and 'Abbāsid mints is needed.⁴²

The evidence presented here should offer new possibilities for the discussion of the circulation of coinage in the late Antique and early Muslim period.⁴³ Although more hoards—especially from Iran and

Mecca in pre-Islamic times (al-Balādhuri 1983:448). The extent to which this practice was general in the Arabian peninsula and continued after the spread of Islam is not clear.

⁴¹ Distinctive local Sasanian-style coinages include the Ṭabaristān half-drahms (Unvala 1938; Walker 1941:130–161; Malek 1993–94), the Bukhar-Khudat drahms (Walker 1941:162–169), and later billon drahms of Sijistān (Sears 1998).

⁴² An early attempt at calculating relative quantities of coinage is Watson et al. (1966). The methodology, however, is fundamentally flawed, so none of the conclusions may be considered trustworthy. A more reliable effort is made by Noonan (1986). The latter work, however, gauges only 'Abbāsid mint output, so it is insufficient for comparison of output between Umayyad and 'Abbāsid mints. Noonan, in fact, points out that non-'Abbāsid coins (i.e., Sasanian drahms, Muslim drahms, and Umayyad dirhams) occur in uneven proportions in European hoards. He was unsure how to explain this (1986:127–129).

⁴³ Notable attempts to bring this evidence together are a series of articles by Thomas Noonan on the circulation of Muslim dirhams into Russia, the Ukraine, and the Baltic countries (Noonan 1978, 1982, 1986). This was taken up by Gyselen and Kalus in their discussion of mixed hoards of drahms and dirhams recovered in the Middle East (1983:61–80).

central Asia—are needed, the current body of evidence is substantial and awaits closer examination.

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AN UNPUBLISHED SILVER DOUBLE *TRAM* OF GOSDANTIN I (1298–1299), KING OF CILICIAN ARMENIA

(PLATE 26)

L. A. SARYAN*

When American Numismatic Society fellow Dr. Paul Z. Bedoukian published his landmark study of the Armenian coinage of Cilicia in 1962, about 12,000 gold, silver, and copper pieces were estimated to be in existence (Bedoukian 1979). About 10,000 of these coins, residing in museums and private collections around the world, were catalogued in Bedoukian's corpus. Although thousands of additional Armenian coins from this period have been discovered in the past four decades, increasing the total above ground to perhaps 80,000, only a few new types or significant new varieties have been reported (e.g., Bedoukian 1981:538–547; Nercessian 1995).

This article presents a unique silver double *tram* of King Gosdantin I of Cilician Armenia, who ruled for about one year between 1298 and 1299. This heretofore unpublished and unanticipated coin sheds important new light on the history and numismatics of this period.

Between the years 1080 and 1198, Cilicia was ruled by Armenian princes, some of whom issued rare and relatively crudely struck copper coins. In 1198, Prince Levon II received a royal crown from Emperor Henry VI, elevating the barony to the status of an inde-

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pendent kingdom. Silver and copper coins soon began to be issued in great profusion, and occasionally gold was struck as well. Silver, which was especially plentiful, was the engine of international commerce. The principal denomination was the *tram*, struck to the standard of the Islamic dirham (about 2.9 grams of 93% fine silver, measuring about 21 mm in diameter). Over the course of two centuries the *tram* gradually gave way to billon *takvorins* weighing 2 grams or less.

Armenian silver coins have enjoyed a relatively high survival rate by medieval standards (Metcalf 1974:186), and hoards of *trams* and *takvorins* often reach the numismatic market. Silver was struck much less frequently as double *trams* or half *trams*, denominations readily distinguishable from the *trams* by both diameter and weight. Gold pieces are very rare; only a dozen or so were known to Bedoukian in 1961 and very few additional examples have been discovered since. Copper coins, issued in quantity in various sizes, were used for small transactions in local markets and to make change.

All silver double *trams* published heretofore carry the name of Levon and are traditionally attributed to King Levon I (1198–1219) (Bedoukian 1979:50–51, 76–77), the founder of the Cilician royal dynasty and its most powerful king.¹ These coins have a diameter of about 27 mm and were struck in fine silver with an average weight of about 5.5 grams (Bedoukian 1979:76–77; for a listing of examples known in 1962 see Bedoukian 1979:131–134). They depict the king on the obverse, seated on a throne facing forward, while on the reverse a single crowned lion with a human face (a pun on the king's name) is seen holding a patriarchal cross. A few different styles and varieties of double *trams* exist, but none of them vary significantly from the above description (Metcalf 1974:186–188; Nercessian 1995:112–114).²

A completely new and different type of double *tram*, inscribed with the name of King Gosdantin, has recently come to light. It was generously placed at this writer's disposal for a few weeks for study and publication. The coin is silver, weighs 5.674 grams and has a diameter of 26–28 mm and a die alignment of 10:00.

¹ See Grierson (1991:135–136) for a different attribution.

² Bedoukian's detailed study on the same topic (1981:279–297) adds a few new varieties.

The obverse depicts King Gosdantin seated on a horse, riding to right with his head facing forward. He is bearded (the beard is formed by a line of fine dots) and wearing a crown with three visible peaks (one on each side and one at the center). A cloak is draped on his shoulders and clasped on the chest below his neck. Gosdantin holds the reins of his horse in his left hand and brandishes a straight sword upright in his right hand. Portions of the saddle, bridle, stirrup, and a caparison or breastplate on the horse are visible. The latter appears to be a decorative textile garment extending horizontally from the horse's chest to the king's knees. A mark is visible on the horse's rear flank. The rein is a single strand looped in the king's hand, and each end is attached to the bridle on the horse's head. As is typical on Cilician Armenian coinage, a legend in Armenian capital letters reads clockwise along the edge, enclosed between two concentric circles constructed of closely-spaced fine pellets. Portions of the outer circle are off the edge of the flan. The inner circle is interrupted to make room for the king's crown. The legend begins with a small cross above the king's head and reads **+ԿՈՍՏԱՆԴԻԱՆՈՍ ԹԱԿԱՒՈՐ ՀԱԵՈՅ** (+GOSDANTIANOS TAKAVOR HAYOTS, Gosdantin King of the Armenians). The last two letters of **TAKAVOR** are ligatured. The diameters of the inner and outer circles of dots are 17–17.5 mm and about 27.5 mm respectively.

On the reverse, King Gosdantin is seen standing upright and facing forward. The king is bearded (again the beard is a line of dots) and a crown with three visible peaks (one on each side and one at the center) rests on his head. He is wearing an ornamented sleeved tunic or kilt which extends to his ankles. A cloak draped over his shoulders, the corners of which are held by a clasp on the chest below the neck, likewise reaches to his ankles. He holds a simple Latin cross in his left hand and brandishes a straight sword aloft in his right hand. The tunic, which is carefully detailed, is of particular interest; it is decorated with several rows of fine dots (possibly representing buttons or jewels), including two rows which cross the chest in an X-pattern, one row across the waist, and another row extending from the center of the waist downward about two-thirds of the way to the lower hem of the garment. The cuffs of the sleeves and the hem are similarly decorated, except that the hem includes three extra dots, one each at the center and left and right sides. As on the obverse, two concentric circles

constructed of closely-spaced fine pellets enclose the legend along the edge. Most of the outer circle is beyond the edge of the flan. The inner circle is interrupted to make room for the king's crown. The clockwise inscription in Armenian capital letters reads **+ԿԱՐՈՂՈՒԹԲՆ ԱՅ Է ԹԱԿԱՒՈՐ** (+GAROGHOUTPN AY E TAKAVOR, by the strength of God he is king). A small triangular symbol appears at the end of the inscription. The diameters of the inner and outer circles of dots are again 17–17.5 mm and about 27.5 mm respectively.

Careful examination of this coin gives no reason to doubt its authenticity. The fields have been partially cleaned but dark toning remains in recessed areas. The piece is evenly struck without any softly struck-up areas. Edges of the metal are slightly irregular and a small area along the edge appears to be chipped off. Fine crevices are visible at several locations along the edge; these are very common on genuine Cilician Armenian coins and indicate that the coin was die-struck. Careful examination of the letters and pellets on the obverse indicates that the coin was slightly double-struck; this is likewise very common on genuine pieces. The coin is slightly thicker on one side indicating that the punch die was not held exactly perpendicular when the coin was hammered; this too is typical of genuine Armenian silver *trams*. Examination of the obverse and reverse fields reveals small striations which probably indicate die polishing; similar markings are often seen on genuine *trams* of Gosdantin I and other kings. The weight of this coin is easily consistent with a double *tram* of this king (Nercessian 1988),³ and its diameter is the same as that of the double *trams* of Levon. The die work, which is of superb quality, matches the style of some genuine silver *trams* of Gosdantin I. The similarity of the epigraphy and the rendering of the king's face and garments indicate that both the obverse and reverse dies used for this coin were cut by the same engraver.

Non-destructive chemical analysis of the newly discovered coin, along with a regular *tram* of Gosdantin I (Bedoukian number 1726,

³ The mean weight of fifteen recorded examples of regular Gosdantin I *trams* is 2.846 grams (median 2.80 g; range, 2.4–3.51 g). It is apparent from this that a double *tram* of Gosdantin should weigh about 5.7 grams, which is very close to the weight of the example reported in this article.

2.473 grams) from this researcher's personal collection, was performed using scanning electron microscopy with energy dispersive X-ray spectroscopy (SEM-EDS), with the kind assistance of metallurgist Robert F. Dragen, President, Aspen Consulting, Inc., Milwaukee, Wisconsin.⁴ In order to avoid damaging the coins in any fashion, the two examples were studied without any preliminary cleaning or preparation. The analytical beam was focused on two or three clean areas of the field or coin edge to determine the chemical composition of the exterior surface alloy. The results of the analyses are presented in Table 1.

TABLE 1. SEM-EDS Surface Composition of Silver Coins of Gosdantin I (percentage by weight)

	<i>Tram</i> (Bed. 1726)	Double <i>Tram</i>
Silver	92.04	93.97
Copper	3.02	2.20
Gold	1.04	0.78
Lead	0.49	0.54
Silicon	0.28	0.89
Chlorine	2.58	1.14
Sulfur	0.55	0.27
Iron	0.00	0.20

The above findings reflect the composition of the surfaces of the coins which, for a variety of reasons, may differ somewhat from their internal alloy. Gold is generally present in the original ore and is not removed by refining, whereas lead is mostly removed during purification except for a residual amount. Thus the presence of these components reflects the imperfect metallurgical processes then in use (Metcalf 1978; Butcher and Ponting 1997:27–28). Silicon, chlorine, sulfur, and iron probably derive from contamination with soil, chemical reaction of the surface metal with environment, and/or past cleaning; they are not thought to be components of the original coinage alloy. The fineness is consistent with that of the best-quality Cilician Armenian silver coinage (Saryan and Dragen 1994; Saryan 1997:10–11). It is worth

⁴ The SEM-EDS analytical procedure is described in Saryan and Dragen (1994).

noting that the percentage of copper in both coins is somewhat lower than expected, possibly because of selective loss of copper from the coin surface during storage and cleaning.

This coin is twice the weight of the known regular *trams* of Gosdantin I and must be ascribed to this king as a double *tram*, a new denomination in the series for this king. Regular *trams* of Gosdantin I utilizing the same types, though rare, have been known since the last century, but not even one double *tram* in the name of Gosdantin has appeared in the numismatic literature heretofore.

Attribution of the new coin to the Gosdantin I must be considered highly probable, since the three succeeding kings of the same name ruled during periods when the kingdom's fortunes were already in sharp decline. The silver coinage of these three kings consists exclusively of smaller debased silver *takvorins* of immobilized typology and notably poorer quality (Bedoukian 1979:95–99); none of these rulers were in a position to strike large, high-quality silver pieces. Gosdantin II (1342–1344), a scion of the Lusignan house, actually called himself Guy and inscribed his name as such on his coinage. The *takvorins* of Gosdantin III (1344–1363) and Gosdantin IV (1365–1373) are hardly more than billon in composition and are relatively crudely executed; they reflect the deteriorating fortunes of the realm (Bedoukian 1954).

A brief review of the history and coinage of Gosdantin I will help to place this coin into its historical context and explain its design. Gosdantin only ruled for a short period and all of his coins are rare (Bedoukian 1979:91, 1981:335). Despite their rarity, they are noteworthy for their highly artistic workmanship and original iconographic concepts. Unlike the coinage of other Cilician kings, all of the coins of Gosdantin display the king holding a sword. He is one of the few Cilician Armenian kings known to have issued gold pieces. Two examples of a single gold type are known, and another variety which may have existed has disappeared without a trace (Bedoukian 1976). According to an inventory of regular Gosdantin I silver *trams* made about ten years ago, just two dozen examples are known from several different dies (Nercessian 1988). Bedoukian records only 24 examples of Gosdantin I copper coins in his catalogue of Cilician Armenian coinage (Bedoukian 1979:335–336).

The historical circumstances of Gosdantin's reign help to explain the selection of the design for this coin.⁵ The decade from 1289 to 1299 was extremely difficult for the Cilician Armenian kingdom, and this is clearly reflected in the coinage. Gosdantin's father, King Levon II, died on February 6, 1289 at the age of 57. During his 27 years of marriage, he and his wife Kir Anna (Keran) had 14 children, of whom four died in childhood. Of the sons, Nerses devoted himself to the church and Alyanak became lord of the castle of Lampron. Three daughters all married well: Zabel married Amaury, son of the king of Cyprus; Stefane married a Crusader prince in Greece; and Rita married Michael, son and colleague of the Byzantine emperor. The five remaining sons, Hetoum, Toros, Smpad, Gosdantin, and Oshin, became, in turn, rulers of Cilicia.

Upon the death of Levon II in 1289, Hetoum was elevated to the throne. Hetoum was a capable ruler who might have done well had he devoted himself wholeheartedly to affairs of state. However, he was so inclined to a religious life that at every opportunity he sought to retreat from worldly affairs to a monastery for contemplation and prayer. Apparently, he was never officially anointed, and perhaps for this reason we have no silver *trams* from his rule. Only some rare billon and copper coins have been attributed to this king.

The political situation was already delicate during the reign of Levon II, and worsened shortly after Hetoum took office. With the fall of the last remaining Crusader principality in Syria, the southern border of Cilicia was now directly exposed to Mamluk attack. The castle of Hromklah, seat of the Armenian Patriarch and an important cultural center, succumbed to a Mamluk siege on March 31, 1292.

In 1293, Hetoum retired to a monastery where he took the name Frater Johannes and handed over the government to his younger brother Toros. Toros was never anointed and to the best of our knowledge did not issue any coins in his own name. In 1295, Hetoum was prevailed upon by the nobility to resume his duties as head of state. The next year, Hetoum and Toros left Cilicia to pay a state visit to

⁵ This historical summary is based on the interpretations of Bedoukian (1981: 334–338, 538–547), Chamich (1827:vol. 2, 263–275), Issaverdens (1874:333–339), and Der Nersessian (1962:655–658).

Constantinople and attend the wedding of their sister Rita to Michael IX, the son of the Byzantine emperor Andronicus II. While they were away, the reins of the country were placed in the care of a third brother, Smpad.

Smpad took advantage of Hetoum's absence to usurp the throne and declare himself king. Hetoum had angered the Armenian church authorities and some of the nobles by adopting Roman Catholicism. With the consent of Armenian church leaders, Smpad was anointed king in 1296. Internal fratricidal struggles now began in earnest. Hetoum and Toros hurried back to Cilicia, but were intercepted by Smpad, arrested, and thrown into prison, where Toros was killed and Hetoum blinded.

While Smpad was thus occupied, the country faced a severe external threat. Smpad had garnered support from Armenia's Mongol allies, but during his reign the country was once again attacked and pillaged by Mamluk invaders.

Smpad ruled more than two years, during which time he struck several interesting varieties of silver and copper coins. The silver coins of Smpad are rather scarce and it is considered possible that many of his coins were melted down after he fell from power.⁶

Gosdantin, the fourth brother, was outraged by Smpad's behavior, and gathered an army to confront him. A pitched battle was fought near Sis, the royal capital, in which Gosdantin was victorious. Smpad was thrown into prison, and with Hetoum's permission Gosdantin became king of Armenia in 1298.

During Gosdantin's reign, the external political situation continued to deteriorate. A Mamluk invasion in the spring of 1298 was repulsed, but in June, the invaders arrived with a larger force and captured several important castles, including Hamous and Til-Hamdoun. Gosdantin was forced to surrender all fortresses south of the Jihan River, including Hamous, Til-Hamdoun, Sarvantikar, and Marash, to the Mamluks.

⁶ Bedoukian (1979:90) cites Sibilian's speculation that the rarity of Smpad's coins may have been the result of melting at a later date to erase the memory of the rebel king. Elsewhere (1976:23), Bedoukian considers the possibility that the coinage of Gosdantin met the same fate as well.

The Armenian nobles, seeing that Gosdantin also was having difficulty defending the country, once again appealed to Hetoum (who had now partially recovered his sight) to resume power. Gosdantin, worried about the developing events, made common cause with his imprisoned brother Smpad. He released Smpad from prison and the two brothers now fought together against Hetoum. For his part, Hetoum had the support of most of the princes as well as soldiers of the Templar and Hospitaller orders. Hetoum was victorious; he arrested Smpad and Gosdantin and exiled them to Constantinople. He once again resumed control of the kingdom, and shortly thereafter, the Armenians and their Mongol allies won a resounding victory over the Mamluks and recovered much lost territory, including Til-Hamdoun.

It is uncertain whether Gosdantin was ever anointed, and in any case his hold on the throne was brief and precarious. Nevertheless, he took great pains to announce his rule through the use of coinage. His coins, which possess great originality and beauty, all prominently depict the sword by which he captured the throne. The gold coins, which have no known parallel in the coinage of Smpad, Hetoum II, or later kings, proclaim that Gosdantin had captured the citadel at Sis and that he, not Smpad, was now king. The striking of gold, regular silver *trams*, and copper pieces all bearing the image of the king wielding a sword could only have made a strong impression on people unaccustomed to seeing such iconography on their circulating money. The double *tram* of Gosdantin I, larger in size than any of the other coins, offered more space to render the same themes, and must have been struck to serve the same propagandistic purposes.

It has been suggested that the Roupenian gold pieces, including those of Gosdantin, were intended as presentation medallions (Bedoukian 1979:43, 71–72),⁷ and the same may have been the case for this double *tram*. The discovery of the Gosdantin double *tram* suggests the possibility that large silvers, yet to be discovered, were issued by other kings as well. It also demonstrates that remarkable new discoveries are possible even in this comparatively well-documented field.

⁷ Bedoukian (1981:335) writes that he agrees with Sibilian that the gold pieces of Gosdantin were presentation pieces that were not intended for circulation.

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A MAMLUK BRONZE WEIGHT IN THE ISRAEL MUSEUM, WITH FURTHER COMMENTS ON THIS RARE METROLOGICAL SPECIES

(PLATES 27–28)

WARREN C. SCHULTZ* AND HAIM GITLER**

I.

The Israel Museum has recently acquired a small bronze object allegedly found in the environs of Jerusalem (Plate 27).¹ In the shape of a rectangle measuring 11 x 11 x 6 mm, the piece weighs 5.94 grams. There is some accreted sediment on the four edges, while the two square faces are clean. The object's most noteworthy features are the feline figures on the upper and lower faces. They are depicted walking right, left paw raised, with a tail with a knot curled over the back. Both beasts were struck with the same punch die; the designs are clearly not cast. On one side, the lion is struck off-square. Each corner of the upper and lower face is adorned with an incuse "bird's-

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¹ The inventory number is IM 98.121.15284. The acquisition was made possible by a donation from J. Chaim Kaufman, Antwerp, Belgium. The object was purchased from a local antiquities dealer.

eye" design of a circle with a dot in the center.² The eight incuse circles are unequally spaced and imprecisely struck by punch dies. While it is anonymous and undated, it is our belief that this object is a weight from the Mamluk era (1250–1517 CE). As such, it would be one of the few known specimens of that rare metrological species, the Mamluk bronze weight.

II.

The literature on Islamic bronze weights is sparse (Balog 1970, 1973; Holland 1986; earlier literature cited within these articles). The literature on Mamluk bronze weights is even scarcer: there are only two articles of immediate relevance, one by Balog and another by Kolbas (Balog 1980–81; Kolbas 1986). The article by Balog describes some possible examples of Mamluk bronze weights and is summarized in this section. The article by Kolbas is discussed below in Section III. In his article, Balog described (among other things) six bronze objects preserved at the Eretz Israel Museum in Tel Aviv. As Balog was unable to provide precise weight values for these objects, accurate weights are provided here for the first time (Balog 1980–81:119). The items are numbers 22 (21.12 g), 23 (14.29 g), 24 (5.81 g), 25 (5.75 g), 26 (14.72 g), and 53 (2.28 g) respectively.³ While exact provenance is unknown, all are said to have been found within Israel.

Balog identified these six objects as being of Mamluk origin, and to the best of our knowledge these are the only previously published specimens identified as Mamluk bronze weights. With the exception of no. 26 (discussed below), however, we do not share Balog's certainty as to their Mamluk date. The designs found on nos. 22, 23, and 24, identified by Balog as "polo-sticks", are ambiguous to the say the least, as is revealed when the objects are viewed from different angles.⁴ Furthermore, a change in axis by 180 degrees reveals that weight 25

² The term is from Holland (1986, esp. p. 174).

³ Balog noted that item no. 53 is severely abraded. Closer examination reveals that this is also true of nos. 22 and 25, albeit to a lesser extent. The abrasions were clearly made after the original casting.

⁴ Shraga Qedar has suggested that no. 22 is an Ottoman-era weight.

bears not a lion but an inscription (possibly *MLK*, although it is difficult to discern). While it is tempting to link weight 53 to the Mamluk sultans al-Nasir Muhammad or al-Nasir Hasan on the basis of the regnal title *al-Nāṣir* ("the victorious") found upon the object, it must be noted that the title also was used by rulers of the Ayyubid period. In appearance the object certainly resembles the Fatimid square weights with which it is pictured in Balog's article. It is a difficult item to explain.

Weight 26, however, is of special interest to this paper, chiefly because it has an image parallel to our new piece (Plate 28).⁵ This weight has fourteen facets, on six of which the feline motif appears. There are only two differences between this feline image and that found on our object. The first is their size; the feline on the heavier weight (no. 26) is much larger than that found on the lighter weight. The second difference is in orientation; on our weight the beasts walk right, while on no. 26 they walk left. The remaining characteristics of the lion (pose, placement of knotted tail, absence of mane, etc.) are the same. Each of the remaining eight facets of no. 26 contains a short legend. Balog read this legend as *jayyid* ("good"). The object has since been cleaned, and a new reading of *mā'amara* ("what he ordered") is now clear.⁶

It should be mentioned that none of these objects thus far discussed bears a date, and only one (no. 53) bears a name, albeit incomplete. Attribution to the Mamluk era has been based exclusively on stylistic grounds. That acknowledged, it must be stressed that the images of felines have not yet been encountered on earlier weights. The appearance of the feline motif is intimately linked to early Mamluk sultan al-Zahir Baybars (r. 1260–1277). This personal symbol of Baybars—it adorns many of his architectural projects, as well as his coinage—is sometimes described as a lion, but may be more accurately a panther since *bars* (from the Turkish *pars*), one of the components of his name,

⁵ Eretz Israel Museum inventory number K-9411. The object was photographed by Mr. Zev Radovan.

⁶ This reading was made by Shraga Qedar, whose assistance is gratefully acknowledged.

has that meaning.⁷ While often thought of only in terms of Baybars, the feline motif was also used by many later Mamluk sultans on their coinage.⁸ The specific characteristics of the feline motif vary tremendously across the Mamluk era. Differences may be seen in posture, paw position, orientation, and presence of a mane, to name but a few. In light of these differences, the resemblance between the feline motifs appearing on our weight and on the multifaceted weight 26 of the Eretz Israel Museum is striking.

To the best of our knowledge, the feline motif is not found on any buildings or coinage from Syria and Egypt before the Mamluks. This suggests to us that we are dealing with Mamluk-era objects. It is important to note, however, that all of the bronze items discussed thus far were found in what was part of the Syrian provinces of the Mamluk empire. As yet, not a single Mamluk bronze weight has been found of Egyptian provenance. The one object put forward as a candidate for such a description was shown by Kolbas to be a forgery.

III.

In an article published in 1970, Balog identified a large bronze object in his collection as a Mamluk weight from Egypt (Balog 1970).⁹ His identification was based on legends found on the coin,

⁷ There is a large amount of scholarship on Baybars and the feline motif (Creswell 1926, esp. p. 147; Meinecke 1972, esp. pp. 217–221). Another archaeological occurrence of this motif has recently been found at al-Ṣubayba (Qafat Namrūd) in the Golan. This example shows the feline with a mane, thereby indicating—in this case at least—a male lion (Hartel 2001; Amitai 2001, esp. p. 120).

⁸ One need only peruse Balog's (1964) plates to see the ubiquity of the feline image. After the reigns of Baybars and his sons, however, the image appears only on copper coins. For a debate over the possible heraldic significance of the image, see Allan (1970) and Balog (1977).

⁹ In Balog's personal offprint of this article, now part of the Israel Museum's numismatic collection, he made the following emendations: on p. 242 he changed the subtitle from "The Ratl (and its Wuqiyyah) Mumeni" to "Multiples of the Mithqal"; on p. 243 he added the phrase "one should, however, not exclude" to the last sentence; finally, on p. 242, he changed the subtitle beneath "Octagonal Weights" to "Multiples of the Mithqal".

which contain the names of the city of Cairo and of the Mamluk sultan al-Ashraf Shaʿban (1363–1376). Balog labeled this specimen a five-*uqiyah* weight. (One *uqiyah* was equivalent to twelve dirhams in the metrological system of Mamluk Egypt.)¹⁰ He later donated this object to the American Numismatic Society in New York, where it is currently located. In an article published in 1986, Kolbas revealed that this object was a modern forgery (Kolbas 1986). As she pointed out, and as is immediately apparent from the illustrations which accompanied her article, the forger filed down a *fals* of Shaʿban and attached it to a lump of bronze.¹¹ The lump itself has a slight resemblance to the “barrel weights” known from Fatimid and Ayyubid times. The cracked welding used to attach the coin is even more obvious now than when Kolbas examined the piece.

As is clear from the title of her article, Kolbas concluded that there were no more Mamluk bronze weights. The present state of evidence makes it clear that this statement is true only for Mamluk Egypt. Mamluk bronze weights are known from the Syrian provinces, as the two specimens discussed above illustrate. It is probable, as Kolbas also pointed out, that small glass objects, which survive in great numbers from Mamluk Egypt, fulfilled the need for small weights there (Kolbas 1986:206). There have been no glass weights found as yet in what were the Mamluk Syrian provinces.

IV.

The function of the Israel Museum’s bronze object remains to be discussed. For two reasons we have little doubt that this is a weight. First of all, the so-called “bird’s-eye” designs are an extremely common decorative feature found on earlier Islamic weights, as the numerous Islamic bronze weights found at Caesarea Maritima illustrate.¹² Secondly, and admittedly this is arguing from the negative, the object

¹⁰ This is a highly questionable assertion. The object’s weight of 145.55 grams would yield an absurdly low value of 2.43 grams for the dirham weight unit. For more on Mamluk metrological values, see Schultz (forthcoming).

¹¹ CMSES 441, reverse showing.

¹² This is readily apparent from the plates accompanying Holland’s article.

lacks any holes, flanges or other indicators of other possible uses. Without a means of attachment, for example, it is extremely unlikely that it could have been used as a button or for decorative purposes.

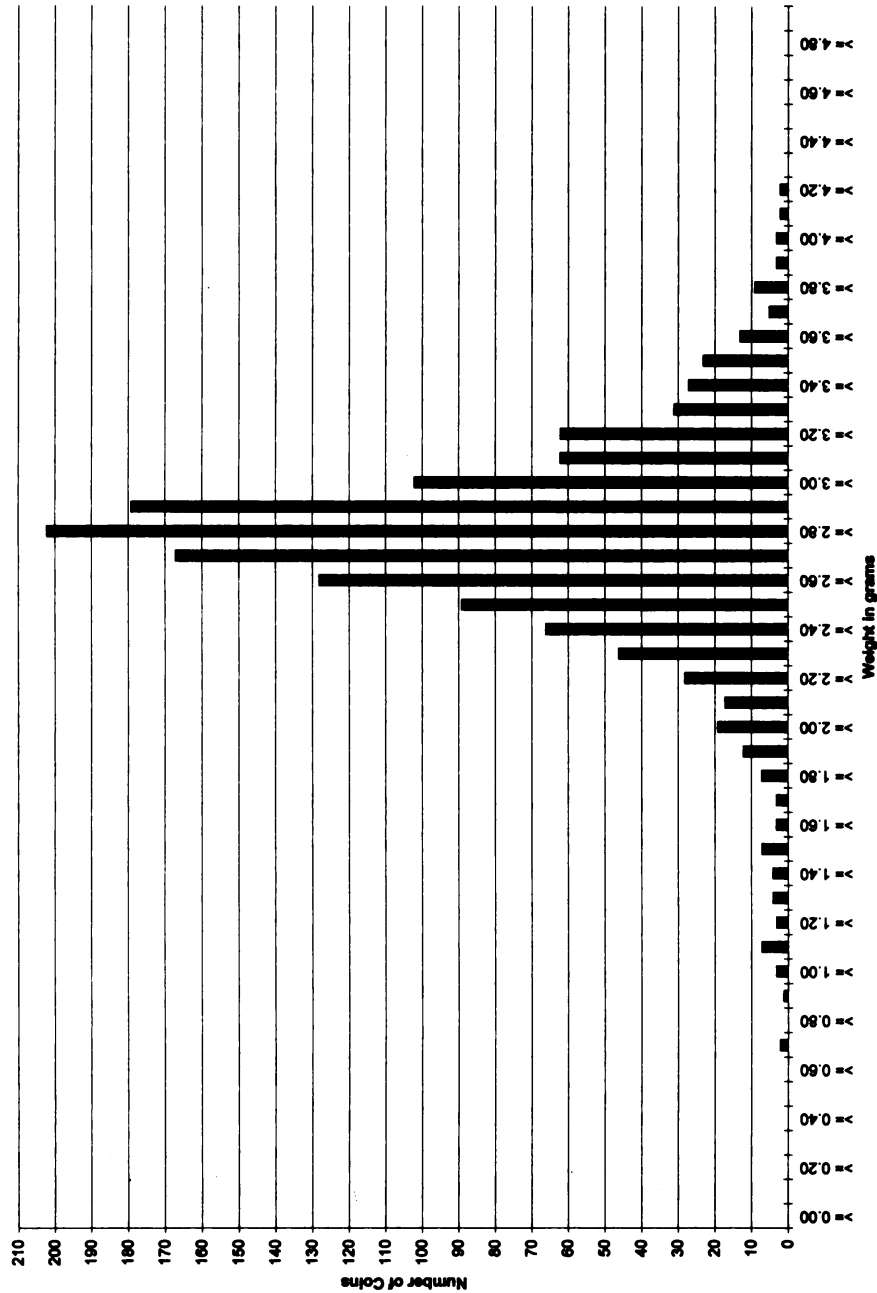
Yet if it is a weight, what was it used to weigh? There are no labels or legends to let us know a precise answer. However, when placed in the greater context of the Mamluk monetary system, we have little doubt that this object was used as a coin weight.¹³ This conclusion is based on the metrological imprecision with which Mamluk gold and silver coins were minted, at least for the first 150 years of the Mamluk Sultanate. Schultz has discussed this issue in detail elsewhere, but an illustrative example is useful here (Schultz 1995:103–164).

In 1995, a hoard containing 1341 Mamluk silver dirhams from the period c. 1250–1310 was made available to Schultz to study, courtesy of Mr. Stephen Album of Santa Rosa, California. Like other Mamluk dirham hoards which have been analyzed, the coins were a jumbled mix of different mints (both Syrian and Egyptian were represented), featuring the issues of several sultans, and including both worn and well-preserved coins as well as a wide range of strength of die strikes. Since the main determinant of value of these coins was their silver content, few of these variables probably mattered to those who used the coins. Most noteworthy for our purposes was the metrological imprecision of the coins found in the hoard, as illustrated by Figure 1.

The hoard contained coins weighing anywhere from 0.71 grams to 4.28 grams. It is significant that there is not a sudden upper cut-off point, as would be expected if the coins passed by tale. These observations are not limited to this hoard. In the more than 20 actual hoards or studies of Mamluk dirham hoards analyzed by Schultz, similar metrological imprecision was seen (Schultz 1995:152–155). With such a wide disbursement, it is hard to escape the conclusion that these coins circulated and were valued by weight.

¹³ In this we disagree with Holland, who argued that such weights, albeit from an earlier period, are not “true coin weights”. The restrictions he places on this term (Holland 1986:185–186, esp. n. 26), derived from the work of A. Dieudonné, strike us as overly specific and anachronistic when applied to the Mamluk period. It goes without saying that their use as coin weights would not in any way prevent them from being used to weigh other substances.

FIGURE 1. A hoard of Mamluk dirhams, c. 1260-1310



Such a system, albeit cumbersome, would need weights to function. It is thus not surprising to us that our object weighs 5.94 grams, or approximately two dirhams. We say “approximately” because despite assertions to the contrary, the weight of the dirham is not precisely known for the Mamluk period. The evidence available suggests at best a possible range, almost certainly between 2.97 and 3.01 grams (Schultz forthcoming).¹⁴ Furthermore, weight number 26 from the Eretz Israel Museum weighs 14.72 grams, suggesting its possible use as a five-dirham coin weight.¹⁵

V.

In light of such a dispersed weight distribution, it is hard to escape the conclusion that Bahri Mamluk dirhams circulated by weight and not by tale, and thus there would have been need for weights with which to weigh these coins. In Egypt this need was apparently fulfilled by the glass weights, while in Syria metallic weights were used. The reason for this difference is unknown, yet another example of how little we know about the method of commercial transactions in Mamluk domains.¹⁶ The newly discovered object described in this article is one of the few metallic weights of probable Mamluk origin to survive from those Syrian provinces of the Mamluk sultanate. We present it to the wider scholarly community in the hope that awareness of its existence might aid in the location and identification of more of its kind.

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¹⁴ The Mamluk *mithqal* unit, the weight unit associated with gold coinage, was likely slightly heavier than the “classical” value of 4.25 grams.

¹⁵ Its weight of 14.72 grams, divided by five, gives a dirham value of 2.94 grams which, allowing for wear, is quite close to the expected range of value.

¹⁶ As was so succinctly pointed out by Kolbas (1986:206).

examine these objects, and for allowing number 26 to be photographed for this article. Schultz's travel to Jerusalem was funded by the College of Liberal Arts and Sciences of DePaul University.

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THREE NOTES ON THE PRIVATE GOLD COINAGE OF THE UNITED STATES

(PLATES 29–30)

JOHN M. KLEEBOERG

These notes are in roughly chronological order. The first of these notes will be a catalogue of the thirteen dies and two hubs for US private gold coinage in the collection of the American Numismatic Society. The second note will discuss the undervaluing of the gold price by the Bechtlers, Moffat, and Kohler. The third note will discuss the Kellogg dies and hubs in detail.

I. A CATALOGUE OF DIES AND HUBS OF US PRIVATE GOLD COINAGE IN THE COLLECTION OF THE AMERICAN NUMISMATIC SOCIETY

Cataloguing and studying actual coin dies is an important tool of modern numismatics (Kleeboerg 1993; Hoge 1994; Sholley 1996). Researchers in private gold coinage of the United States have both the fortune and the misfortune that many dies have survived. This is fortunate, because it means that the modern researcher can study them; it is also a misfortune, because the study of private gold is plagued by the devilment done by unscrupulous individuals who have used the dies to make restrikes (Lee 1997; Stack's 1997, lot 1012, gives

a good, succinct description of the Nagy restrikes). The collection of the American Numismatic Society is particularly rich in dies of US private gold. It has five dies of the Bechtlers, seven dies and two hubs of Kellogg, and one die of Clark, Gruber & Co.

Two of the Bechtler dies were acquired with the Bechtler press when the New York banker and coin dealer Julius Gutttag donated it. Gus Greene sold the press and dies to Garold W. Tapp in 1926, who sold them in August 1926 to Julius Gutttag; Gutttag donated the press and dies in January 1928. I found a letter of January 25, 1928, in the ANS archives by Garold W. Tapp, an importer and dealer in foreign coins, paper money, curios, and relics of Greer, South Carolina, to ANS Curator Howland Wood. This letter gives the history of the press and the dies:

Some months ago a neighbor of mine kept telling me that his father had a money press and a set of dies for the making of coins. He did not know when, where or how used. I succeeded in getting him to borrow the dies for me, and upon inspection I found that same was the dies for the \$1 Bechtler coin. I believed that the outfit was the Bechtler outfit when he first mentioned the matter to me, but was not sure until I inspected dies. Later I went to his father's many miles up in the country, where I bought same and sent on to Mr. Gutttag. When purchasing Mr. Gutttag stated that he wanted the outfit for the purpose of giving a Society he had in mind, and on that account he got outfit at a real bargain.

The history of the press since the Bechtler's parted with same is unknown. At the time of the Bechtlers and for many years after, moving, etc. was carried on by wagons and wagon trains. It seems as if Mr. Gus Greene (whom I bought outfit from) secured same from the estate of his father. His father did much hauling and wagoning and Mr. Greene states that he did not know where—but that his father got the outfit in his moving around. Where he secured same is a mystery. It has been in the Greene family for years, and years. I would not be surprised if Mr. Greene's family has not owned same for at least 50 years, if not more. When I bought outfit—the press was under a large scuppernong vine, and was being used as an anvil, nut cracking block, etc. etc. and you will note that the steel used in press is of the hardest kind. The handle he was using as a post in the pasture. The dies he valued much and had them packed carefully away in his personal trunk. Am sorry that I cannot give you any other information on the outfit—but the whereabouts of same seem to be a mystery. It has been claimed that the original Bechtler press was in the collection of the

State Historical Commission, Raleigh, NC. They have also advised me that the dies were there also. However, I took the matter up with Colonel Olds of the Commission and he states that the only part of the working outfit they have is the half set (1 pc other missing), of the \$5 die. (Tapp 1928)

The other three Bechtler dies were donated by Mrs. Helen C. Chapman, the widow of the Philadelphia coin dealer Henry Chapman, in memory of her husband in 1948. The Clark, Gruber & Co. die was donated by the Ohio coin dealer James Kelly in 1953; I found no correspondence indicating where Kelly obtained it. Walter Breen says that the mountain die that would pair with the ANS \$10 Clark, Gruber 1860 eagle die turned up in Philadelphia, worn and rusted, "lately" (Breen 1988:659). The remark in the otherwise excellent history of the First National Bank of Denver, "No Clark, Gruber & Company coin dies are known to exist", should be corrected accordingly (Adams, Dorsett, and Pulcifer 1984:9). The donation of the Kellogg dies will be discussed in detail in the third of these notes, but they will be catalogued here.

More dies for US private gold coins exist in other collections, notably a \$5 Bechtler die in the North Carolina Museum of History, referred to by Tapp above (Barfield and Strawn 1980:59; Kagin 1981:255), and J. J. Conway dies in the Colorado Historical Society (Lee 1997). The period from 1840 onwards was a heyday of diesinking in the United States. There were many diesinkers and many token manufacturers, particularly in the explosion of issuers during the Civil War. Dies of the mid-nineteenth century abound. This abundance contrasts with the rarity of US-made dies of the eighteenth century. The only example that comes to mind is the counterfeiter's die for a Mexican pillar 8 reales attributed to Samuel Casey (Scott 1960, plate opposite p. 48). The only US-related die of the eighteenth century is the obverse of the Washington Born Virginia die that is now in the collection of the American Numismatic Association in Colorado Springs, and that was made in Birmingham (Breen 1988:139).

Catalogue

Each accession number refers to a particular provenance:

1921.136, Combined Sale and Gift of Anita P. L. (Mrs. Karl) Kellogg,
October 1, 1921.

1928.20, Gift of Julius Gutttag, January 13, 1928.

1948.33, Gift of Mrs. Helen Chapman in Memory of Henry C.
Chapman, March 6, 1948.

1953.113, Gift of James Kelly, August 1953.

The photographs of the dies have been flipped so that they are now
"right-reading".

Bechtler Dies

1928.20.2, A. Bechtler, \$1, Rutherfordton. Diameter of bottom base
15 mm, widest diameter 30 mm, diameter of die face 12 mm,
height 32 mm. Obverse die for Kagin 24, Breen 7764.

Note: Kagin and Breen disagree as to which is the obverse and
which the reverse for the Bechtler dies. I follow Breen's usage.

1928.20.3, A. Bechtler, \$1, Rutherfordton. Diameter of bottom base 38
mm, widest diameter of top of die 30 mm, diameter of die face 15
mm, height 27 mm. Reverse die for Kagin 24, Breen 7764.

1948.33.1, A. Bechtler, \$5, Rutherfordton. Diameter of bottom base 15
mm, widest diameter 30 mm, diameter of die face 24 mm, height 35
mm. Obverse die for Kagin 27-30, Breen 7767-8, Friedberg 6.

1948.33.2, C. Bechtler, \$5, Rutherfordton. Diameter of base 41 mm,
diameter of die face 24 mm, height 59 mm. Obverse die for Kagin
16, 31, Breen 7751-2, 7769, Friedberg 9.

1948.33.3, A. Bechtler, \$5, Rutherfordton. Diameter of base 50 mm,
diameter of die face 23 mm, height 23 mm. Reverse die for Kagin
29-31, Breen 7767-9, Friedberg 6.

Kellogg Dies and Hubs

1921.136.2, Kellogg & Co., \$20, 1855, San Francisco. Diameter of base
46 mm, diameter of die face 32 mm, height 49 mm. Obverse die for
Kagin 3b, Breen 7920, Friedberg 37.

1921.136.3, Kellogg & Co., \$20, 1855, San Francisco. Diameter of die
base 46 mm, diameter of die face 32 mm, height 49 mm. Obverse die
for Kagin 3b, Breen 7920, Friedberg 37.

- 1921.136.1, Kellogg & Co., \$20, 1855, San Francisco. Diameter of die base 45 mm, diameter of die face 32 mm, height 49 mm. Reverse die for Kagin 3b, Breen 7920, Friedberg 37.
- 1921.136.4, Kellogg & Co., \$20, 185-, San Francisco. Diameter of hub base 40 mm, diameter of hub face 32 mm, height 41 mm. Obverse hub for Kagin 1-3, Breen 7917-20, Friedberg 37.
- 1921.136.5, Moffat & Co. and Kellogg & Co., \$20, 185-, San Francisco. Diameter of hub base 45 mm, diameter of hub face 32 mm, height 39 mm. Reverse hub for Kagin 1-3, Breen 7917-20, Friedberg 37.
- 1921.136.6, Mexico, 8 escudos, 1846 MF, México. Diameter of die base 41 mm, diameter of die face 37 mm, height 35 mm. Obverse die for Krause-Mishler 383.9, Friedberg 64.
- 1921.136.7, Mexico, 8 escudos, 1846 MF, México. Diameter of die base 41 mm, diameter of die face 37 mm, height 35 mm. Obverse die for Krause-Mishler 383.9, Friedberg 64.
- 1921.136.8, Mexico, 8 escudos, 1846 MF, México. Diameter of die base 41 mm, diameter of die face 37 mm, height 37 mm. Reverse die for Krause-Mishler 383.9, Friedberg 64.
- 1921.136.9, Mexico, 8 escudos, 1846 MF, México. Diameter of die base 42 mm, diameter of die face 37 mm, height 35 mm. Reverse die for Krause-Mishler 383.9, Friedberg 64. All four of the Mexican dies have three notches or "dimples" on the shank to fix the dies in place.

Clark, Gruber & Co. Die

- 1953.113.1, Clark, Gruber & Co., \$10, 1860, Denver. Diameter of base 40 mm, diameter of die face 26 mm, height 42 mm. Reverse die for Kagin 3, Breen 7941, Friedberg 19.

II. THE UNDERVALUING OF THE GOLD PRICE BY THE BECHTLERS, MOFFAT, AND KOHLER

Researchers in the field of private gold coinage currently agree on three groups of genuine gold bars: the bars issued by Moffat & Co.; the bars issued by Frederick D. Kohler as assayer for the California State Assay Office; and the large bars made for inter-bank transactions, which are known to us through literary references and the recov-

eries from the *Central America*. The *Central America* had bars from five issuers: Blake & Co., Harris, Marchand & Co., Henry Hentsch, Justh & Hunter, and Kellogg & Humbert. The authenticity of other bars is disputed (Buttrey 1997). Although Michael Hodder has criticized Buttrey's methodology, Hodder himself has said that he is not able to establish the authenticity of each and every Western gold bar (Rubin and Alexander 1999:8).

All of these bars bear three pieces of information about their value: their fineness, expressed in carats or thousandths; their weight (with the sole exception of the Moffat \$16 bars), in pennyweights and grains or in troy ounces; and their value in dollars. Using these three pieces of information, we can then calculate at what gold price, expressed in dollars per pure troy ounce, the bars were issued. Since we are interested in the gold price alone, the bar need no longer exist, so long as the information expressed on the bar continues to exist. This is the case for a \$40.07 Kohler bar, which was stolen from Mint Cabinet on August 16, 1858 (Breen 1988:636, no. 7801), and probably melted. Another Kohler bar, for \$54.09, was illustrated in an engraving in Richardson's book *Beyond the Mississippi* of 1867 and has not been seen since (Richardson 1867:458; Breen 1988:637, no. 7805). The formula I use to calculate the gold price may be expressed as follows:

$$G = V / (W \times F/P)$$

where

G is the gold price per pure troy ounce;

V is the value of the bar or denomination of the coin;

W is the weight of the object in troy ounces;

F is the fineness;

P is the fineness of pure gold: 24 if the fineness is expressed in carats, 1000 if the fineness is expressed in thousandths.

To increase confidence in their product, issuers of private gold coins sometimes also stamped fineness and weight on their coins; all their coins bore a denomination as well. The Bechtlers did this; Moffat and Kellogg did this for some of their issues.

Moffat and Kohler bars have the weight in ounces, pennyweights, and grains on the troy system. It may be helpful to review the relationships of these various weights with one another:

Troy System

24 grains (gr.) = 1 pennyweight (abbreviated dwt.)

20 pennyweights = 1 ounce (oz.)

480 grains = 1 ounce

12 ounces = 1 pound

The troy ounce, which is used to measure gold and silver, is heavier than the avoirdupois ounce, which is used to measure base metals, but the troy pound is lighter than the avoirdupois pound. I use the troy ounce quote for pure gold in US dollars because it is the most widely used quotation today.

The bars issued by Moffat and Kohler express fineness in carats. 24 carats is pure; a bar of $21\frac{3}{4}$ carats, for example, is therefore $\frac{87}{96}$ purity. Purity nowadays (and on the *Central America* bars) is expressed in thousandths; $21\frac{3}{4}$ then becomes 906 fine.

Each of the three groups of western gold bars—the Moffat bars, the Kohler bars, and the bars recovered from the *Central America*—has a readily understandable historical and economic context.

The Moffat bars are the earliest. Although Moffat took coining equipment with him to California, he did not have a capable diesinker until Albert Küner arrived on July 16, 1849 (Adams 1913:95). We can securely date the Moffat bars to 1849, for a \$16 bar was exhibited to the Royal Numismatic Society in London on November 22, 1849 (Haggard 1851). There were good reasons for their creation: there was need for a coinage substitute, but Moffat did not yet have a qualified diesinker, so he issued bars.

Moffat issued only one denomination of bars for circulation in large numbers: the \$16 piece. Unlike the other denominations, it does not bear a weight. Its weight must have been too widely known (or easily checked) to need to be stamped upon it. Moffat's \$16 ingots weigh more than a Mexican 8 escudo piece, which is as it should be, because the fineness was slightly less ($20\frac{3}{4}$ carats vs. 21 carats) than the official fineness of a Mexican 8 escudo piece. Buttrey's principles on marking the weights on bars apply here:

Weight if irregular should be marked; if regular it need not be. Absence of weight marking on standardized bars can be borne and equally absence of weight standard if the individual pieces are marked; but the absence of both standard and mark is intolerable (Buttrey 1973–74:36).

Fred Holabird has said, justly, of this description that Buttrey "has hit the mark nearly exactly" (Holabird 1999:86). This is exactly what occurs on the Moffat bars. The \$16 bar is standardized, so it does not bear a weight. The bars in other denominations are not standardized, so they do bear weights. Eckfeldt and DuBois also noted this (Eckfeldt and DuBois 1851:230).

The Kohler bars were issued in 1850. By this time coining equipment was available, and used by many private individuals, but the State Assay Office was in a peculiar position: the Federal Constitution specifically prohibits the states from coining (a result of the unpleasant experiences with state copper issues during the Confederation period). Many private coiners called their issues "ingots" to evade these bans, even when their "ingots" were monetiform. The Bechtlers' coins were occasionally called "ingots" (Kagin 1981:28). The octagonal \$50 slugs of Humbert and later the United States Assay Office of Gold were also called "ingots" (Adams 1913:53-54; Kagin 1981:141). The State Assay Office chose the shape of bars to evade the law banning states from coining (Adams 1913:4; Kagin 1981:138), just as the United States Assay Office of Gold would later use an octagonal shape to evade a similar problem. So Kohler had good, specific reasons to issue bars, just as Moffat did.

As Buttrey points out, bars certainly existed other than those issued by Moffat and Kohler (Buttrey 1997:105-107). But these were used almost exclusively in inter-bank transactions, and were later melted to make double eagles or sovereigns. Only an accident such as the sinking of the *Central America* would preserve these bars.

Until 1834, the US Mint price for a pure troy ounce of gold was \$19.38. From 1834 until March 1933, it was \$20.67. The dollar then depreciated against gold until January 1934, when the United States pegged the gold price at \$35 an ounce. That price lasted until December 1971, when the United States eliminated the link between the dollar and the gold price.

When we examine those issues of private coiners that indicate weight, fineness, and value, we find that the Bechtlers, Moffat, and Kohler issued their coins and bars at a gold price below the government price, usually about 1% to 1½%. This undervaluation may be

to compensate for the charge the Federal mint would make for converting bullion into coin.

Eckfeldt and DuBois noticed this too, commenting about Bechtler and Moffat:

What has surprised us, both in this case, and that of the private mint in North Carolina, is that the valuations should be wrong even upon their own data; being deducible by a simple rule of arithmetic. Every one knows as a starting-point, that a weight of 258 grains of gold, nine-tenths fine, is by our laws worth ten dollars. Moffat's ingots marked 21 $\frac{5}{32}$ carats (881.6), were variously calculated \$18.10 to \$18.14 per ounce; the proper result, at that fineness, is 18.22 $\frac{1}{2}$. But perhaps, as in weight and quality, so in value, *de minimis (in auro) non curat California* (Eckfeldt and Du Bois 1851:230).

Eckfeldt and DuBois are performing the same calculation, using 881.6 gold, which I perform using pure gold. Converting these figures to prices per ounce of pure gold, \$18.10 works out to a gold price of \$20.53, \$18.14 to a price of \$20.58, and \$18.22 $\frac{1}{2}$ to \$20.67.

The final remark is an adaptation of the legal principle "*de minimis non curat lex*"—"the law is not concerned with trifles". Eckfeldt and DuBois restate it as, "California is not concerned about small matters in gold". Eckfeldt and DuBois also noticed that this was the case for the Kohler bars, for they write, "We find a slight undervaluing in his basis of calculation" (Eckfeldt and DuBois 1852:9).

The Bechtlers were the first to do this. When the gold price was \$19.38, they issued coins at a gold price of \$19.20; and after the gold price was increased to \$20.67 in 1834, they issued coins at gold prices from \$20.32 to \$20.57. Tables 1 and 2 show this practice by the Bechtlers.

The two ingots issued by Moffat were made at gold prices of \$20.60 and \$20.62: a higher price than the Bechtlers', but still an undervaluation (Table 3).

Kohler's undervaluation is very consistent (Table 4). His gold price is always \$20.35. The only exception is a bar issued at his Sacramento office, which was issued at a price of \$20.64—fairly close to the US Standard. Perhaps this was issued towards the end of 1850, when the US Assay Office was about to open, and the gold price had crept up to the US Standard.

TABLE 1. The gold price used by the Bechtlers before August 1834

Breen ref.	Weight (grains)	Fineness (carats)	Denomination	Gold Price
7742	75	20	\$2.50	\$19.2000
7743	150	20	\$5.00	\$19.2000
7745	75	20	\$2.50	\$19.2000

TABLE 2. The gold price used by the Bechtlers after August 1834

Breen ref.	Weight (grains)	Fineness (carats)	Denomination	Gold Price
7746-7747	28	20	\$1.00	\$20.5714
7748-7752	140	20	\$5.00	\$20.5714
7753	67	21	\$2.50	\$20.4691
7754-7755	134	21	\$5.00	\$20.4691
7756-7757	64	22	\$2.50	\$20.4545
7758-7760	128	22	\$5.00	\$20.4545
7761	28	20	\$1.00	\$20.5714
7762	70	20	\$2.50	\$20.5714
7763-7764	27	21	\$1.00	\$20.3175
7765	128	22	\$5.00	\$20.4545
7766	134	21	\$5.00	\$20.4691
7767	141	20	\$5.00	\$20.4255

TABLE 3. Moffat's issues, 1849

Breen ref.	Weight (dwt)	Fineness (carats)	Denomination	Gold Price
7779	15.25	21.75	\$14.25	\$20.6218
7780	10.25	21.4375	\$9.43	\$20.5994

TABLE 4. Kohler's issues, 1850

Breen ref.	Weight (dwt)	Fineness (carats)	Denomination	Gold Price
7800	40	22	\$37.31	\$20.3509
7801	44.75	21.125	\$40.07	\$20.3456
7803	49.75	21.5	\$45.34	\$20.3466
7804	56.333	20.9375	\$50.00	\$20.3481
7805	60.75	21	\$54.09	\$20.3513
7806	42.5	20	\$36.55	\$20.6400

Note: Breen has the wrong weight for his no. 7804; it is actually $56\frac{1}{3}$ pennyweights, not $56\frac{1}{4}$. This error appears to originate with Kagan (1981). It has been corrected from Garrett (1980, lot 911).

With the opening of the US Assay Office of Gold under Augustus Humbert, matters changed. Humbert issued his "ingots" with a gold price of \$20.67—the US standard. Adams and Breen have published the weight and fineness relationships for the various denominations, and when we calculate the gold price from these figures, we invariably arrive at \$20.67 (Adams 1913:34; Breen 1988:612). The weights given by Adams and Breen vary slightly: Breen gives the weight for the .884 fine eagles as 262.67 grains, for the double eagles as 525.34 grains; Adams, using contemporary newspapers, gives the weights as 262.7 and 525.4 grains. These differences do not prove to be significant—Adams's weights result in a gold price of 20.6694, Breen's weights in a gold price of 20.6718—but I have used the Adams figures in preference to the Breen figures for these two denominations (Table 5).

All other issuers use the \$20.67 price from then on. There are two issues after 1851 where the coins indicate weight, fineness, and value; these are the Moffat \$10 pieces of 1852 and the Kellogg \$50 pieces of 1855. These are both within a cent of \$20.67 (Table 6). The bars in the *Central America* were stamped in accordance with a gold price of \$20.67 per troy ounce, and hit it nearly exactly (within two mills), as Table 7 shows.

I have excluded two Kohler bars from consideration here. In Breen's encyclopedia, they bear numbers 7802 and 7807. Buttrey named these bars as suspect (Buttrey 1997:108). Number 7807 bears the fineness 21 carats; weight 51 pennyweights, 2 grains; and a denomination of \$47.71. This results in a gold price of \$21.34—a dollar too much. No unquestionably genuine bar has a gold price much higher than \$20.67; the *Central America* bars, for example, exceed that figure by less than two mills. The relationship of the fineness, weight, and value and the resulting gold price demonstrate that Buttrey was quite correct in condemning this bar.

Number 7802 has the fineness $21\frac{3}{8}$ carats, weight 46 pennyweights, and a denomination of \$41.68. Its gold price works out at \$20.34, which is consistent with our other results. But Walter Breen pointed out that the bar has had its weight changed: its weight was originally stamped in as 41, yet a 6 was then stamped in over it, changing the weight to 46 pennyweights (Breen 1988:636). I have confirmed this by a close physical examination of the bar. It is hard to believe that

TABLE 5. Humbert/USAOG: the gold price becomes \$20.67

	Weight (grains)	Fineness	Denomination	Gold Price
Breen p. 612	1319.3	0.880	\$50.00	\$20.6721
Breen p. 612	1308.9	0.887	\$50.00	\$20.6719
Breen p. 612	1290	0.900	\$50.00	\$20.6718
Breen p. 612	525.4	0.884	\$20.00	\$20.6694
Breen p. 612	516	0.900	\$20.00	\$20.6718
Breen p. 612	262.7	0.884	\$10.00	\$20.6694
Breen p. 612	258	0.900	\$10.00	\$20.6718

TABLE 6. Moffat 10s, 1852, and Kellogg 50s, 1855

	Weight (grains)	Fineness	Denomination	Gold Price
7787-7788	264	0.880	\$10.00	\$20.6612
7921	1309	0.887	\$50.00	\$20.6704

TABLE 7. Bars from the *Central America*: their gold price

Issuer and serial number	Weight (troy oz.)	Fineness	Denomination	Gold Price
Blake & Co., No. 5190	4.95	0.795	\$81.34	\$20.6696
Blake & Co., No. 5213	16.75	0.722	\$249.99	\$20.6714
Harris, Marchand & Co., No. 6488	13.52	0.807	\$225.54	\$20.6716
Harris, Marchand & Co., No. 6524	22.52	0.878	\$408.73	\$20.6716
Hy. Hentsch, No. 3068	12.52	0.973	\$251.82	\$20.6716
Justh & Hunter, No. 4343	22.83	0.883	\$416.72	\$20.6718
Justh & Hunter, No. 4251	16.83	0.864	\$300.59	\$20.6717
Kellogg & Humbert, No. 810	23.34	0.898	\$433.26	\$20.6715
Kellogg & Humbert, No. 554	38.68	0.864	\$690.84	\$20.6718
Kellogg & Humbert, No. 962	208.1	0.874	\$3,759.78	\$20.6718

From Yeoman (1998)

Note: The *Guide Book* has the wrong weight for Kellogg & Humbert no. 554. This has been corrected from the photograph in Thompson (1998:110).

Kohler would have done this. It is an open invitation to start "raising" his bars, just as so many forgers raised the denomination on state banknotes. Kohler was quite careful to prevent alteration of his bars: he stamped all the edges of the bars with the words "STATE ASSAYER". All the Kohler bars I saw in the Smithsonian (including Breen 7802) are so stamped; the Garrett specimen was as well. A man who was so concerned about making his bars tamper-evident would not carelessly alter the weight; he would have melted the bar and started over.

III. DIES OF KELLOGG & CO. IN THE COLLECTION OF THE AMERICAN NUMISMATIC SOCIETY

When Edgar H. Adams published his history of California private gold issues in 1911–1912, he had heard that the dies for the Kellogg \$20 and \$50 still existed (Adams 1913:86). Walter Breen wrote that the Kellogg \$50 dies were still in existence in 1970 (Breen 1988:652).

The Kellogg \$50 dies were bought by the Kagins in 1998 and displayed at their bourse table at the ANA Convention in Portland, Oregon, along with a 1943 letter from an art dealer of San Francisco, Harry Cutler. This letter indicates that the dies were acquired by Senator T. W. H. Shanahan of Shasta County, California, who was superintendent of the San Francisco Mint during both terms of President Wilson. Shanahan left the dies to his daughter, Mrs. Elizabeth S. Elder, who sold them to Cutler (Newman 1998).

The Kellogg \$20 dies were bought by the ANS in 1921 after Howard Newcomb brought them to the attention of the curator, Howland Wood. The correspondence between Howland Wood and Anita P. L. Kellogg gives us the background of this acquisition. Wood wrote to Mrs. Anita Kellogg in Oswego, New York, on September 7, 1921:

Mr. Howard R. Newcomb was telling me the other day that you had certain dies, including several of the Kellogg Twenty-dollar gold piece, and that you desired to sell these.

Mr. Newcomb is most anxious that these dies be in responsible hands so that copies could not be struck from them, and asked if our Museum could not undertake to obtain them.

Mrs. Kellogg replied on September 8:

Though I have received several good offers for the two dies of the \$20. gold piece, like Mr. Newcomb—I would prefer to put them in responsible hands—in the museum—but would not let them go for less than \$100.

I have other dies—4 (four) Mexican—+ 3 Kellogg.

Would you care to have me express them all to you and you could let me know what value you place upon them?

My brother in law, Mr. E. R. Kellogg, has a round, milled, gold \$50. Kellogg piece.—And an octagonal \$50. slug—neither of these have been in circulation. May I ask you what *their* value would be to some collector?

Wood replied on September 12:

I wish you would send on all the dies to the Society. We feel that these should be in safe hands. I have been authorized to offer you \$100. for these and if this is satisfactory to you, we can send you a check if these dies are what we think they are. I must however see them first. I understand from Mr. Newcomb that there were some hubs also. Also please let me know if these dies you are sending are all of the Kellogg ones there are.

The two \$50 gold pieces are valuable, and when I get back to the city will see if I can find any one interested in them.

Mrs. Kellogg answered on September 16:

The dies go to you today.

The two \$50. gold pieces I spoke of have never been in the market. I sold a \$50. slug in 1916.— through Mr. Elder. I have put just the \$100 value on the box, as I do not know the value of the other dies.... As far as I know there are no other Kellogg dies.

So apparently she did not know about the existence of the \$50 dies; this is understandable, since the \$50 dies do not seem to have then been in the control of the Kellogg family.

Wood inquired on September 21:

Do you know anything of the history of the Mexican dies? Were they made to strike coins in California? Please let me know if you do know anything about them and whether you care to include them in the price we have already offered.

Mrs. Kellogg replied on September 26:

All I know about the Mexican dies, is that in California Mr. J. G. Kellogg also coined the Mexican coins at the time he was coining for the US Government—owing to great shortage.

Mrs. Kellogg's claim that Kellogg coined money for the US government is comprehensible, because Kellogg, before he set up on his own, was an employee of Moffat & Co. and its successor firm Curtis, Perry, and Ward, the contractors for the United States Assay Office of Gold.

An article in the San Francisco Bulletin of April 10, 1856, reprinted by Edgar Adams, supplies us with the other pieces of the history of these dies. This article would have been written by the San Francisco banker and journalist, James King of William, who would be murdered the following month.

James King of William was born in Georgetown, in the District of Columbia and apparently added "of William" to his name to distinguish himself from local men with the same name. He moved to San Francisco, where he set up a banking house, which did not prosper, so he merged it into Adams & Co. He then turned to muckraking journalism, editing the San Francisco *Evening Bulletin* from October 1855. He revealed that County Supervisor James P. Casey had previously served a term in Sing Sing prison in New York, whereupon Casey shot and mortally wounded James King on May 14, 1856; King died on May 20th. This led to the formation of the Second Vigilance Committee, who on the day of King's funeral took Casey out of jail and lynched him.

James King of William wrote:

The American decimals are not the only coins that have been made in this city. It is well known that Woods had a contract with Santa Anna to coin Mexican Ounces [i.e., 8-escudo pieces] in this city, under the sanction of the Mexican Government. Woods sent Sam Ward to Mexico, and Ward agreed to pay the one-legged Dictator a certain sum for the privilege. Drafts were drawn on Adams & Co., and, as we understood, were cashed in Mexico, Santa Anna pocketing the proceeds. Woods accepted the drafts here, but as far as we can learn they were never paid, as before they became due Adams & Co. had failed. The Ounces were coined on Montgomery Street, and when, after the failure of Adams & Co., we heard of the gold-dust "doctoring", we at once suspected there was some doctoring about these Ounces, which we believe were all shipped to China, through Bolton & Baron, who bought them of Woods' broker, without knowing anything about where

they were made. It was thought best to say nothing about this affair until a return from China could be had, to see if the Ounces were of good weight and fineness, and then, so far as Woods was concerned, the matter was dropped, for it was very questionable whether with the sanction of the Mexican Government any law had been violated, unless it could be proved that the coin fell short of the value it purported to be. (Adams 1913:xxvi-xxvii).

James King of William was in a position to learn the inside details of the Mexican ounces story, for he was an employee of Adams & Co. himself (Cross 1927:1.60-61).

When we read the entire *Bulletin* article, the story of the Mexican ounces seems at first to be a digression; most of the article discusses the necessity for ceasing to circulate the private gold coinage, and in particular the issues of Kellogg. Once we realize that King is really making an underhand dig at Kellogg, for their involvement in the Mexican ounces scheme, it becomes understandable. Kellogg & Richter had their office at 106 Montgomery Street, "nearly opposite Adams & Co." (Adams 1913:83).

Isaiah C. Woods (1824-1880) was the managing partner, ultimately the president of Adams & Co., one of the largest express companies and banks in California in this period (Cross 1927:1.191, 193). Adams & Co. failed on February 23, 1855 and in August Woods slipped aboard the *Audubon*, some say dressed as a woman, and sailed for Sydney, Australia. He later went to Europe, New York, and Texas, where he helped establish the San Antonio-San Diego mail route. Shortly before his death in 1880 Woods was managing James Keene's California ranch (Ward 1949:164 n. 3). Woods would have had Kellogg strike the coins, just as other bankers—Burgoyne & Co. (Cross 1927:1.51) and Argenti & Co. (Cross 1927:1.63)—had Shultz strike coins for them, which exist not with their names, but in the name of Shultz (Adams 1913:75). (Adams spells the name of the San Francisco bank "Argenti"; we have adopted the spelling "Argenti" from Cross.)

Sam Ward is a famous historical personage in his own right. He was a close friend of Longfellow; he studied in Europe, and then returned to New York City to enter his father's bank, a profession at which he failed. He went out to California to recoup his fortune, and prospered until he lost all in the San Francisco fire of May 1851. One of his prop-

erties, the *Niantic*, a beached ship that was turned into a disreputable hotel, was excavated in 1978 (Elliott 1938:424; Johnston 1988: 242–243). Ward then managed a store and ferry on the Merced River. In 1854, he went to Mexico to persuade Santa Anna to release the imprisoned remnants of the Raousset-Boulbon filibustering expedition. From then on he made his career as a professional “fixer”, a lobbyist, for which he was well suited by temperament. He lived in Washington and was known as “the King of the Lobby”. Sam’s sister, Julia Ward Howe, wrote “The Battle Hymn of the Republic” (Elliott 1938; Tharp 1956; Thomas 1965).

Ward’s life is well documented, but there are a number of gaps, and his life in California is not as well documented as we might wish. None of the books on Sam Ward discuss the Mexican ounces scheme. We do have a number of pieces of circumstantial evidence that strengthen the truth of James King of William’s account. Ward was in Mexico at the right time (between August 12 and the end of November, 1854) and he did see President Santa Anna (Thomas 1965:196–197). He carried with him a letter of authorization written on the stationery of Adams & Co. (Elliott 1938:436; Thomas 1965:195). Ward said that when he was in Mexico “a transaction in which I had a heavy stake was to be approved or rejected by President Santa Anna” (Ward 1949:77). The Mexican ounces scheme fits a “transaction in which I had a heavy stake” better than releasing the prisoners of the Raousset-Boulbon expedition. Ward personally knew Isaiah C. Woods. Ward says he met Woods on the Merced River in 1852, and “the future had in store for us vicissitudes, and associations to which I recur with unalloyed satisfaction” (Ward 1949:164).

The broker, Bolton, Barron & Co. (this is the spelling in Cross) was a partnership of James R. Bolton and W. E. Barron. They were primarily a merchandising firm but carried on some banking as well in 1849–1850 (Cross 1927:1.65).

The episode of the Mexican ounces must have taken place between December 19, 1853, when Kellogg set up on his own account as Kellogg & Richter (Adams 1913:83), and February 23, 1855, when Adams & Co. failed (Cross 1927:1.70–71). Santa Anna was president of Mexico for the fourth time from March 17, 1853, to August 16, 1855. Sam Ward arrived in Mexico after August 12, 1854. Ward had to wait

some time before he could see Santa Anna. The most probable period for coining the Mexican ounces would therefore be November 1854 to February 1855; James King seems to suggest that the episode happened in the very last months of the existence of Adams & Co. This was also a period when Kellogg & Co. was producing massive amounts of coin.

Restrikes and Other Forgeries

Howland Wood's greatest concern, and that of Howard Newcomb too, was to prevent the dies falling into the wrong hands. This was a very real danger. Wood and Newcomb were well attuned to the numismatic grapevine, and they had probably heard of the illicit restrikes and copy dies being made in this period.

In the early twentieth century, unscrupulous individuals made phony California private gold coins (Adams 1909). Many can be traced back to Stephen K. Nagy. Nagy was the son-in-law of J. W. Haseltine, who was, in his turn, the son-in-law of William Idler. Breen has called William Idler the mint's "fence", and these three men—Idler, Haseltine, and Nagy—were involved with some of the most notorious US forgeries of the late nineteenth and early twentieth centuries (see Stack's 1997, lot 1012, for a discussion of the Nagy restrikes). In the area of private gold, the following creations have been ascribed to Stephen K. Nagy: the copy dies of the coins of Templeton Reid (Breen 1988:621), the fantasy dies of the Massachusetts & California Company (Breen 1988:631), and restrikes of the United States Assay Office of Gold (Kagin 1981:326; Stack's 1997, lots 1011–1012). A complete listing of the Nagy forgeries is supposed to form part of the Newcomer inventory of private gold, but we have not seen it. Another forgery of the period was the so-called restrike of the Baldwin vaquero 10-dollar piece, a copy die made by Albert Küner, which Edgar Adams believed existed before the San Francisco earthquake and fire of 1906 (Adams 1913:105, 108; Bowers 1980, lot 879; Breen 1988:638). Henry Chapman, in March 1922, had restrikes made from Bechtler dies (Breen 1988:624–625, 628). Chapman's widow gave these dies to the ANS in 1948; they are catalogued above. Newcomb and Wood had good reasons for their fear about what would happen if the dies ended up in the wrong hands.

Mexican Coins for China or California?

Were the Mexican 8-escudo pieces designed to circulate in China or in California? There were heavy imports from China from the very beginning of the gold rush, so there would have been a need for specie to send to China (Cross 1927:1.126, 166). But it is possible that James King of William was trying to cover his tracks by claiming that the 8-escudo pieces had all been sent to China. Mexican 8-escudo coins, as a legal tender, were acceptable at the Customs House, even though most California private gold was not. But if James King of William, as an employee of Adams & Co., had conspired to pass off these coins as genuine at the Customs House, he was guilty of a Federal crime. He had to state that all the coins involved had been sent to China, where US law does not apply. So even if these 8-escudo pieces did circulate in California, James King of William had strong motives for covering up that fact, and saying they went to China, out of reach of US law.

We have contacted collectors of Mexican coins, but we have not yet found a coin that matches these dies. It is possible that none exists today; all the coins may have been melted in China. The dies are excellent pieces of work, very close to genuine Mexican 8 escudos.

We might call the coins struck from these dies “imitations”, for they contained a full amount of gold. According to James King of William, these coins were authorized by the most senior person in the Mexican government—admittedly in return for a bribe. One could argue that these are official Mexican coins, from yet another Mexican regional mint—San Francisco.

Hubs and Production of Kellogg & Co. Double Eagles

The regular Kellogg & Co. \$20 dies and hubs are of great interest too. The hubs lack a name of the issuing firm, but do have the first three digits of the date—185. The firm name would have been punched in later, using a logotype for Kellogg & Co. Whoever made the hubs was a realist enough to know that hubs last more than a year, but many partnerships fall apart more quickly than that.

The production of the Kellogg double eagles is a complex story. A copper pattern exists for the Kellogg double eagles that does not bear a date; so it could not have been made using the hubs we know. The

various patterns, hubs, dies, and coins seem to fall into the following arrangement.

Kellogg & Richter set up business at the beginning of December 1853. They thought they might be able to begin coining double eagles before the end of the year, but they could not be sure; so when they tested their dies, they made copper patterns with no date. These are the copper dateless patterns (Kagin 1; Bowers 1980, lot 907).

December came and went, and Kellogg & Richter were unable to begin regular production. But when the next patterns were made to test the dies, it was January 1854, so there was no problem about punching the date into the dies—production would be certain to begin within twelve months. In January 1854 Kellogg & Richter struck the copper-gilt patterns, dated 1854 (Kagin 2).

On February 9, 1854, Kellogg issued their first double eagles in gold. Proof specimens were made and distributed to important business associates, most notably Augustus Humbert, who would become a full partner of Kellogg before the year was out. These coins are the proof double eagles with thin numerals (Kagin 1b). Any business strikes with thin numerals are to be attributed to this early issue.

Kellogg originally intended only to fill a gap until the San Francisco Mint got started. But Kellogg was more efficient than the Mint, and was producing more double eagles in a shorter period of time. At this point Kellogg shifted to hubbing its dies. Many differences in the dies, such as the lack of a ball on the five, do not indicate a different hub but rather that those small elements were not struck deep enough when the hub was driven into the die. The last digit of the date is often out of line with the other digits—the 4 is high, the 4 is distant—which indicates that Kellogg was using hubs dated 185 to make the dies (Kagin 1, 1a, and 2). It appears that this hub lasted into 1855; the last digit of the date is often weak, indicating that it was punched in separately (Kagin 3, 3a, 3b).

Kagin has suggested that when the United States Assay Office of Gold closed, Kellogg took the Moffat reverse dies for the \$20 pieces with him (Kagin 1981:286). This is possible, but Moffat and Kellogg's production was so great that the dies probably did not last that long.

Hubbing would make die varieties for Kellogg double eagles minimal. Variations in the dies result from different positions for the

two elements that had to be punched in, the logotype with Kellogg & Co., and the final digit of the date (4 and 5), or from the striking pressure used to strike the hub into the die, or from hand retouching of details (hair, curls, eyebrow, numeral serifs, arrowheads) which did not fully strike up on the die. This would explain, for example, the long and short arrowhead varieties (Breen 7919 and 7920).

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BOOK REVIEWS

Ian Carradice, *Greek Coins*. Austin: University of Texas Press, 1995. 112 pp., 10 plates, 70 illus. ISBN 0-292-71184-0. \$19.95.

N. K. Rutter, *The Greek Coinages of Southern Italy and Sicily*. London: Spink, 1997. 191 pp., 210 figs. ISBN 0-907605-82-6. £25.00.

There seems to be a trend in numismatic publications today toward general books. What is their purpose and at what readers are they aimed? A closer look at the two volumes under review here will help answer these questions. Both authors are not new to this task: Ian Carradice with the late Martin Price (to whose memory *Greek Coins* is dedicated) co-authored *Coinage in the Greek World* in 1988, an outstanding introduction in the Seaby series that won the RNS 1989 Lohtka Prize, and N. K. Rutter wrote *Greek Coinage* (Shire Publications, Aylesbury, 1983).

The purpose of *Greek Coins* "is to present a history of Greek coinage century by century from its origins...to the conquest of the Hellenistic kingdoms by Rome in the first century B.C." (p. 7). This survey starts with an introductory chapter on "Coinage and the Ancient Greek World" emphasizing the importance of coins as evidence of the glorious past of classical Greece and western civilization. Here the reader can find information on what a coin is, what makes it Greek, how coins were produced and where the precious metals came from, as well as on the more intellectual origin and function of coinage. The different weight standards are summarized. The design and the art of some of the most skillful Greek engravers illustrates the point that "these small durable relics are as much a product of the 'Classical Age' of Greece as the Parthenon". The closing chapter, "The Legacy of Greek Coins", follows the development of Greek coinage beyond the end of the Hellenistic monarchies into the Roman empire and the coins struck by the Greek cities under Roman administration (the so-called

Greek imperials now more accurately described as Roman provincial coinages). Carradice shows that the influence of Greek coin types continues through imitations of Greek motives through the Renaissance and even modern times.

The division of the other six chapters by century from the beginnings around 600 BC is admittedly artificial but “at least provides a convenient temporal structure in which to place events and developments and thus to facilitate their understanding” (p. 7). It is of course the prerogative of the author to choose this somewhat drier presentation over a more global and thematic one; at least it distinguishes this book from other general introductions. In Chapter 2 on early coinage, Carradice refreshingly concentrates on the different means of exchange before the invention of coinage, often with appropriate and interesting quotations from the literary sources, and on the confusion surrounding the origins of coinage, rather than elaborating on the still much-debated problem of chronology as so many others have done. It is more relevant to put the early electrum coins in historical perspective and follow their development through the introduction of a bimetallic system in Lydia under Croesus and then the real spread of silver coinage in mainland Greece after 550 BC, which “was essentially a Greek phenomenon” (p. 24). The chapter on the fifth century deals mainly with the coinages of the Persian wars, the development of coinage in Sicily, the introduction of bronze coinage after 450 BC, and the coinage of Athens. The fourth chapter leads up to the switch from the autonomous coinages of the Greek *poleis* to the king’s money under Philip II of Macedon and Alexander the Great and then the creation of the Hellenistic monarchies which one after the other inaugurated their own characteristic and propagandistic coinages. The formations and dissolutions of these various kingdoms, and ultimately the recovered freedom of the Greek cities as reflected in the coins, are the object of the last three chapters. In all, this brief survey is as comprehensive as it can be in the limited space allotted, with an inevitable concentration on precious-metal and large-denomination coins. The illustration is ample—70 figures, inserted in the text, with on average at least three coins each, except for the maps and other objects, plus 10 color plates—and certainly representative in terms of variety. The quality of the black-and-white photographs, however,

leaves much to be desired: the coins are often too dark and with the light shining in high contrast on the foreheads of portraits. The decadrachm of Akragas (Figure 18a) barely looks better than the bronzes of the same city (Figure 18c). Though the lack of emphasis on chronology is welcome, as already noted, dates would have been useful in the captions of the illustrations.

In a general book like this, where statements cannot be refined, it is easy to find points of disagreement. For instance, the statement on p. 63, "This [i.e., the gold issue of Lachares] is one of only a few issues of Athenian coinage produced between the fourth and the second centuries", is a somewhat misleading assertion without a discussion of the important production of owls in this period, of which many were certainly "imitations" but others no doubt had been struck in Athens. In commenting on the huge production of gold Lysimachi in the third century BC (p. 68), it would have been preferable to mention and illustrate a coin from one of the major mints, like Byzantium or Calchedon, instead of the extremely rare issue of Rhodes, which is only an imitation of a gold stater of Byzantium. Hoard evidence (in particular M. T. Abgarian and D. C. Sellwood, *NC* 1971) attests to a beginning of Parthian coinage around 220–215 BC and not only in the early second century with Mithridates I, as E. T. Newell thought (pp. 69–70, 85). The coins of Massinissa of Numidia (Figure 48e, p. 75) depict a galloping horse on the reverse, not a horseman. The cistophori (pp. 80–81) issued by the kingdom of Pergamon and the cities under its dominion deserve more space since they represent an important innovation in monetary history. The reduced weight (about 12 g) of the cistophoric tetradrachm generated sizable savings for the state and also allowed a simple exchange with the new Roman coin, the denarius (3 denarii = 1 cistophorus). The cistophorus was adopted by the Romans and continued to be issued until the reign of Hadrian, as one of the most successful ancient currencies. Also, it is a pity that the works of Andrea Mantegna and Pirro Ligorio inspired by ancient coins could not be illustrated.

Carradice has produced a thorough introduction to Greek coins that will be useful both to beginners and to knowledgeable collectors and numismatists. If it is not the best of its kind, it is perhaps due more

to the limitations of the format and of the production, than to the penmanship and expertise of the author.

Rutter's *Greek Coinages of Southern Italy and Sicily* is a more substantial introduction since it focuses on one particular area, the western Mediterranean. It is a handsomely produced small hardcover book, with 210 coins illustrated with individual captions in the text and two maps. The photographs here too are not the best: it is disappointing that some of the most beautiful ancient Greek coins ever engraved—for instance, some Syracusan tetradrachms (pp. 152–154) or the famous Akragas decadrachm again (p. 163)—could not be reproduced in their full splendor.

The division of this book too is chronological and basically by centuries. Greek coinages in the West started after 550 BC and ended with the second Punic war at the end of the third century. The chronological span therefore is shorter than in Carradice's *Greek Coins*. Southern Italy and Sicily are treated separately since their coinages are so fundamentally different. Three chapters are devoted to each region (early coinage, fifth century, and fourth and third centuries). The coins of the “colonies” (more correctly referred to as *apoikiai* nowadays, or homes away from home, to distinguish them from colonies in the modern sense) cannot be understood without their historical context, and Rutter starts his book with an excellent chapter on the Greeks in southern Italy and Sicily and also discusses the non-Greek peoples of Sicily: the Sicels, the Sicans, the Phoenicians, and the Elymians.

Early coinage in southern Italy consisted mainly of the incuse coins of the Achaean cities Sybaris, Metapontum, Croton, and somewhat later Caulonia (Velia stands apart with a coinage on dumpy flans on the Phocaeen standard). These coins were struck on their own weight standard—a lighter version of the Corinthian stater, divided into three drachms—and in a very peculiar and sophisticated technique. On hoard evidence, which Rutter analyzes thoroughly, these cities probably started minting around 550 BC and some of them, like Metapontum, continued as late as 440 BC, albeit on reduced flans. R. rejects the idea of a political alliance as an explanation for the incuse technique (p. 20), though after G. Le Rider's recent discussion of a passage in the *Poroi* (*KME* [1989], pp. 159–172) of Xenophon, many

scholars agree that the adoption of a unified coinage must reflect at least some kind of commercial and monetary alliance. Not only staters but fractions were issued as well at all mints, including Caulonia (S. P. Noe, *The Coinage of Caulonia*, pp. 17, 53 nos. 201–207). The coinage of Laus belongs in the orbit of the incuse coinage of Sybaris and could have been mentioned with the other less-known issues (p. 26) instead of only in the next chapter (p. 36).

“The fifth century was the century when coinage in southern Italy really ‘took off’” (p. 34), and R. gives a thorough overview city by city of the mints that continued issuing coins after their incuse phase as well as of the new coinages that appeared: Taras, among the most important, started issuing coins around 500 BC. The defeated Sybaris ceased to be an important mint, but the newly founded (in 444 BC) Thurii initiated a splendid coinage with the head of the patron goddess and a bull on the reverse. Similarly Heraclea, a joint foundation of Taras and Thurii in 433/32 BC near the ancient Siris, opened a mint that remained very active through the third century. Terina “still a city without a site...produced some of the most imaginative and beautiful...coin-types” (p. 61) starting c. 460 BC. It was also in the fifth century that coinage began in Campania, prompted perhaps by the troubled period of wars between the Etruscans, the Carthaginians, and the Syracusans, ending with the victory of Hieron of Syracuse in 474 BC. Two of the very few Italian gold issues were struck in this period of disturbed conditions, at Cumae and at Poseidonia. The new coinage of Campania distinguished itself from the purely Greek coinage in southern Italy by the incorporation of native elements. This assimilation became more and more common in the fourth century. One of the most significant changes in the second half of the fifth century was the introduction of bronze coinage, at Thurii around 440 BC, at Poseidonia around 420 BC. It can be dated by comparison with the silver issues. Incidentally, the new obverse type in Poseidonia is correctly described as Zeus brandishing a thunderbolt in the text (Figure 51 on p. 67) but as Poseidon in the caption; the poor illustration does not show the eagle and the thunderbolt clearly at all. By the end of the fifth century, coinage in southern Italy had reached its greatest extent in terms of the number of active mints and of standardization.

Chapter 4 opens again with an excellent presentation of the historical background for the fourth and third centuries BC. Coin production declined in some mints, but in others it flourished as never before and new mints opened. The most important is Locri, which started issuing coins for the first time in the second half of the fourth century BC. In Campania coinage continued to be abundant not only at Cumae and Neapolis but in six other mints, small communities often known only by their coins (the Fistelians, the Fenserni, the Hyrians, etc.). These mints must have operated in close collaboration: often the same obverse die is used in different mints. The most likely explanation for this remarkable phenomenon is that there probably was a central mint—Neapolis is the likeliest candidate—striking for the smaller cities as well. The didrachm of Cumae (Figure 55 on p. 73) bears a fish on the reverse and not a corn grain.

The older mints of Velia and Taras continued to issue coins in abundance in this period. Taras was unique among the southern Italian mints in striking a range of smaller silver denominations which often bear pellets as denomination marks (a characteristic of Sicilian coinage in silver and bronze but not used in southern Italian bronze coinage). This city did not strike bronze coins until the Hannibalic wars toward the end of the third century BC.

The Second Samnite War ended in 304 BC with the establishment of Rome's power in southern Italy. This is reflected in the coins: they served as models for the new Roman silver, but they also became more and more Roman, as shown for instance by an issue of bronzes from Neapolis with the usual head of Apollo and man-faced bull but with the inscription **POMAION**. In the second half of the fourth century and at the beginning of the third century, several military leaders invaded and occupied southern Italy for some years, and their incursions are often reflected in the local coinages: Alexander the Molossian stimulated an issue of gold at Taras, Pyrrhus in his expedition against Rome struck coins at Locri. Coinage had spread more and more beyond the limits of the Greek cities of southern Italy, and by the second half of the third century local coinage was administered and reshaped under Roman power. One wonders why the important coinage of the Brettii was omitted in this survey of the last Greek coinages of southern Italy.

The coinages of Sicily are treated separately in the next three chapters (Chapters 5 to 7). Unlike in southern Italy, there was no uniformity of system in the sixth century. The first two mints to strike coins were Selinus and Himera around 550 BC. The early staters of Selinus were probably Attic didrachms and not Corinthian tridrachms as R. suggests, since a unique drachm is known for the second archaic group. R. mentions three types of fractions for Selinus but remains vague about their weight system. Recent research shows that the heavier denomination (Figure 104) is not a litra but an obol and that the mint never had a regular issue of litrai. The other two are very rare and bear pellets as marks of value, a feature typical of Sicilian coinage from the beginning: five for the *pentonkion* (not mentioned by R.) and two for the *hexas*. For most of the other sixth-century mints, die studies are available and R.'s survey rests on solid ground. In discussing the beginning of coinage at Naxos (which used to be dated around 550 BC but in fact must be almost a generation later), R. rightly warns against the use of stylistic comparisons for precise chronology.

The chapter on the fifth century deals at length with the coinage of Syracuse, which by that time had become the most important mint. Regarding "The 'Demareteion' Problem" (p. 121–124), R. presents a very interesting idea, put forward a few years ago in an article: the mention of the Demareteion in the literary sources could possibly be a creation of the Hellenistic period. Hieron II was looking for dynastic links with the Deinomenids. He had strong political and commercial ties with Ptolemaic Egypt, and the coinage of Arsinoe and Berenike served as model for his own coinage, in particular for the *Philistideion*, the coin of his wife. The gold crown offered to Demarete and the *Demareteion* then would be nothing but a literary myth. Obviously the early silver decadrachms do exist, but they have to be interpreted and dated in their numismatic context, which points strongly in favor of a date in the last years of Hieron I.

The rest of the chapter presents the activities of the other Sicilian mints of the fifth century: Akragas, Gela, Messana, and so on. Selinus resumed coining after an interruption of several decades, but on hoard evidence not as early as 450 BC (as R. proposes) but rather in 440–435 BC. Before that, around 450 BC, the mint experimented with bronze

coinage and issued a series of cast coins, as Himera did. The works of the signing engravers are presented next, as well as the introduction of bronze coinage, which at Syracuse can be connected with the upheaval of the Athenian invasion of 415 BC.

The last chapter begins with the reign of Dionysios I of Syracuse. His name never appears on the coins, and until fairly recently very little coinage was attributed to him: "At the present time, though, it has become generally recognized that Dionysios' coinage matched the scope and ambition of his military plans and was minted in a range of denominations in all three metals, gold, silver and bronze" (pp. 153–154). These issues are the beautiful gold double decadrachms or 100 litrai with Herakles fighting the lion on the reverse (Figure 170), some signed on the obverse by the famous Kimon and Euainetos, the later silver decadrachms of the same engravers (Figures 172–173), and the heavy bronzes that used to be dated to Timoleon (Figures 174–175).

After a survey of the indigenous coinages and the coinage of the Carthaginians in Sicily, the chapter and the book end with Syracuse and the issues of Hieron II and his family. "It is possible to speak of the end of a tradition because from this point on the currency of Sicily changed fundamentally.... Rome now dominated the island militarily and soon also numismatically... Roman coinage...monopolized the currency of Sicily" (p. 179).

One could quarrel fastidiously about details of dating and about the illustrations which are not always the best: the captions almost seem to have been written by a different author (Figure 179 on p. 161 is not Segesta but Panormos, identical to Figure 180 on p. 162). As always perfect consistency of transliteration of the Greek geographical names is impossible, but the reader will easily recognize familiar cities. These minor disagreements are only meant to emphasize the high quality and accuracy of the text. This is no doubt the best review of southern Italian and Sicilian coinages in recent years, extremely well written and worth reading.

To return to my initial question, the proliferation of "general" books on coins seems to reflect a desire to reach out beyond the wealthy collectors or the specialized libraries to a wider audience. Therefore, the exquisite but lavish and expensive format of the Max Hirmer volumes of the 60s and 70s had to be abandoned in favor of a more

modestly illustrated and more affordable type of publication: from the coffee-table book to the subway paperback. As long as the content remains of the highest scholarly level and is presented in a clear and original way, even or especially for the uninitiated, as is certainly true of these two volumes, the change is for the better.

CARMEN ARNOLD-BIUCCHI

Soheir Bakhoun, ed. *Sylloge Nummorum Graecorum France 4. Département des monnaies, médailles et antiques: Alexandrie I, Auguste-Trajan*. Zürich: Bibliothèque Nationale de France and Numismatica Ars Classica, 1998. xxxii pp., 105 plates with facing text. ISBN 3-9520369-3-5. FF 600.

This first fascicule of the Alexandrian collection in Paris includes 1321 coins spanning the period from Augustus to Trajan. To put this in perspective, there were 1245 in Dattari's *Numi Augg. Alexandrini*; the Ashmolean Museum listed 816 coins in the original volume, and a further 66 in the supplement; there were 565 in *BMC Alexandria*. All these were sparingly illustrated. Among more comprehensively illustrated collections Cologne includes 740, *SNG Copenhagen* 276, *SNG Milan* 949. By any measure this is a significant addition to the visible corpus of Alexandrian coins.

It is in the nature of *Sylloge* volumes to be short on text and long on illustration, but perhaps for that very reason the principle of arrangement must be sensible and up-to-date. The arrangement is based in general on that of *Roman Provincial Coinage* I, but for cross-references the Cologne collection has, somewhat surprisingly, been given pride of place. The rationale is that a comprehensive list of earlier references is provided there. Students of the coinage are used to being steered to Dattari's *Numi Augg. Alexandrini* as the major reference, followed by Milne's catalogue of the Ashmolean Museum coins; these have the advantage of representing more comprehensive collections and, after multiple reprints in both cases, wide availability. Admittedly the treatment of Alexandria in *RPC* is sketchier than that of other coinages, but it is the most thoughtful presentation of the material; in spite of the statement "il faut également ajouter le *RPC*", references are irreg-

ularly given and this complicates the task of anyone seeking companda.

The user will encounter some surprises, among them the inclusion of the Phoenix/Bull *chalkoi* (here nos. 121–125), often attributed to Caligula but whose attribution was questioned by Savio. These were listed at *RPC* 5112 as “coins probably incorrectly attributed to Caligula”, and I am not aware that any contrary argument has been made since 1992. The editor is of course entitled to her opinion, but the issue might have been noted. Also somewhat surprising is the omission of the nome coins of Trajan.

The catalogue includes a dozen or so “apparently unpublished” pieces, as well as some real rarities or otherwise noteworthy coins, among them the didrachm of Claudius’ year 3 (178), a drachm of Otho (697), and the splendid hemidrachm of Domitia (1000) otherwise documented only at Dattari 694. The coinage of Domitian in general will repay a close look: the large number of coins illustrated here makes it possible to see as never before the sharp stylistic break and the concomitant improvement in epigraphy and elaboration of bust styles at the beginning of year 10 (AD 90/91).

The catalogue also includes, albeit with an imprecise transcription of the obverse legend and an incorrect reference to *BSFN* 36.7, the silver tetradrachm of Antiochene type attributed to Alexandria (1057). The author remarks of 1025–1027, “Il est étonnant de constater l’existence de ces émissions de billon pour l’an 3 de Trajan”, and indeed it would be. I am not wholly convinced: only 1025 has what looks like a Γ on the reverse, and the character is only partially preserved; all three coins are of types otherwise known for year 6 (= 5), which is easily confused with Γ; and, most troubling of all, 1024 shares its obverse die with a coin in the ANS collection (1944.100.55215) of year 6 with eagle r. This last requires explanation in view of the three-year interval, especially given the apparently substantial size of the issues of year 5.

Paris is, of course, one of the “core” collections included in *Roman Provincial Coinage*. Of 1321 coins presented in this first fascicule of Alexandria, more than half—716—are comprehended in the first volume of *RPC* and add nothing that is new to it. A further 284 coins bring us to the end of the reign of Domitian, and will presumably

be included in the volume of *RPC* that will be in print before this review appears. The skeptical might ask whether it is efficient to produce a volume that costs about \$100 to add to a body of material that has already been extensively described and has benefited from the considered arrangement of the *RPC* editors.

On balance I think that for this coinage the answer is affirmative. The collection itself compares very favorably to others that have been published. Moreover, unlike, say, the Cologne collection, this one was not pre-selected: the separate histories of the *ancien fonds*, the Vogüé, Delepierre, Seymour de Ricci, and other collections, as well as the “doubles”, insure the inclusion of sometimes lengthy series of like coins that make stylistic comparisons possible. Together with other recent publications, *SNG France 4* brings the coinage of imperial Egypt to a level of accessibility consistent with its importance. It is time now for students to approach the material critically and refine our understanding of the relationship of Egypt's coinage to that of Rome and the empire at large.

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Philip Grierson. *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection*, volume 5: *Michael VIII to Constantine XI, 1258–1453*. Washington, DC: Dumbarton Oaks, 1999. 638 pp., 91 plates in 2 vols. ISBN 0-88402-261-7. \$210.00.

Dumbarton Oaks has recently issued Volumes 4 and 5 of the *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection (DOC IV and V)*. These volumes cover the last years of the empire, 1081–1261 and 1258–1453, respectively. A 26-year gap separated these final volumes in the series from the first three—an “unconscionably long time”, author Philip Grierson admits in the preface. Less unconscionable than representative, perhaps, of western scholarship's traditional difficulty in mustering enthusiasm for the Late Byzantine period.

Confronted by an *hyperpyron*, the standard gold coin of Michael VIII Palaiologos (1259–1282), French scholar Louis Bréhier could only

describe what he saw as “degeneration in its final term”. Several scholars have since tried to redeem Late Byzantine coinage: T. Bertelè was intrigued by the iconographic innovation in Laskarid and Palaiologan coinage; C. Morrisson has praised the unparalleled variation and inventiveness of the coin types during these centuries (*Byzance*, 496-97, for example); Simon Bendall has spent 25 years pushing forward the study of coins of the period. As the Late Byzantine period is finally emerging as a viable and vital part of Byzantine studies we can expect that more and more attention will be turned to the coinage of the day.

Nonetheless, for numismatist, art historian, and historian alike, Late Byzantium presents an unwieldy body of material to organize and interpret. It is not simply that the coins are, in Grierson’s words, “less attractive to the eye than those of any earlier two centuries of Byzantium”, or that they demonstrate an “appallingly low” standard of workmanship, though these tend to diminish scholarly interest. Imperial control over the mints was loose, and hardly a hint of information about the mints themselves has emerged. Coin legends in the late period became highly varied, often abbreviated, and sometimes were omitted entirely. The gold coinage—the easiest to classify—was highly debased to begin with, and barely lasted to the mid-fourteenth century, after which it was no longer struck at all. The *basilicon*, a high quality silver coin modeled on the Venetian *grosso*, was frequently minted with only the title *Autokratores Romaion*, with no indication of which *Autokratores* were represented. In other instances *basilica* were minted with no imperial reference at all, portraying Christ on one side and the Virgin on the other. The empire’s last monetary initiative, the heavy silver *stavraton* coin that became the principal coinage of Byzantium’s final 80 years, crowds so many letters around its circumference that it is often illegible, while its simple, stylized imperial portrait is of little help in identifying the issuing emperor. Consequently it is only in the last 30 years that coins have been reliably assigned to Constantine XI, Byzantium’s last emperor.

Compounding the intrinsic difficulty of the material evidence is a real shortage of focused scholarship in the field. Grierson is careful to credit the pioneers of the field—Sabatier, Bertelè, Gerasimov, Protonotarios, Bendall, and others—but the brevity of Grierson’s discussion of

the literature is telling. Prior to Grierson's catalogue, the most thorough examination of Late Byzantine coinage was undertaken by collector Simon Bendall. During the 1970s and 1980s, Bendall published numerous short articles and several monographs in the field, including catalogues of Michael VIII's billon *trachea* (1974), of later Palaiologan coinage in general (1979), and of his own collection (1988). Bendall's studies and accompanying illustrations by P.J. Donald established a framework for research into the coinage but they did not achieve the masterly synthesis and accessibility that Grierson's new catalogue affords. Still important for a series of focused articles, the fundamental scholarship of Bendall and Donald is largely incorporated and updated within *DOC V*.

Philip Grierson is assured of his place among the most important numismatists of the twentieth century and the skills and experience he brings to *DOC V* are unrivalled. He also authored Volumes 2 and 3 of the Dumbarton Oaks and Whittemore Collection catalogue, along with countless articles and books on numismatics in general and Byzantine numismatics specifically. Indeed, it is hard to find fault in the long delay of *DOC V* after taking stock of Grierson's accomplishments in the intervening period, including his 1982 publication of *Byzantine Coins*, the most comprehensive single-volume survey to date, and his co-authorship of two volumes of the *Medieval European Coinage* project.

It is no surprise that Grierson provides a clear, professional presentation of the material. What might surprise some readers, instead, is the breadth of the collection itself. While other collections have tended to focus on the Early or Middle Byzantine periods to the neglect of the Late Byzantine period, the Dumbarton Oaks and Whittemore collection includes a truly extraordinary body of Palaiologan coinage. It should be noted here that it is in large measure Grierson himself to whom credit is due for the exceptional scope of the collection; both as donor and acquisitions advisor he carefully cultivated the Palaiologan holdings. The catalogue includes over 1800 entries, almost all illustrated in adjacent black-and-white photographic plates. Where appropriate, Grierson has looked beyond the Dumbarton Oaks collection to include several additional coin entries, but the authority of the catalogue rests on the strength of the Harvard collections.

And it is only when confronted by the full extent of Palaiologan coinage that one can fully understand and appreciate it. A marked feature of the period is its willingness to experiment with new iconographic programs. Michael VIII Palaiologos introduced the first coin portrait with the Byzantine emperor kneeling, and his successors would show the *basileus* in proskynesis, mounted on horseback, or in a nimbate bust portrait. Gold *hyperpyra* show the Virgin rising above a circuit of city walls, guarding the restored Byzantine capital. In the copper coinage a wide range of elements, including wings, crosses, lilies, and city models, are deployed in diverse configurations. New photography throughout the catalogue reveals for the reader the inventiveness of Late Byzantine coin types, and the sylloge arrangement, where catalogue entries face corresponding image plates, makes it easy to browse through the coin photography.

Accessibility has always distinguished Dumbarton Oaks catalogues from the typically highly specialized literature of the numismatic field, and Volume 5 even more effectively addresses the different needs of the catalogue's varied audience. Numismatists will appreciate the concordances directing them to past publications of the coins. Historians and art historians consulting the catalogue for related projects will appreciate the level of detail in the index, particularly with respect to iconography. Readers should watch, however, for several instances of error in indexing; it is laudable that one can find in the index "Virgin, standing, half-left, raising arms in adoration (Hagiosoritissa)", but among the six catalogue entries cited, five direct the reader to the wrong coins.

DOC V follows the traditional Dumbarton Oaks format with preliminary chapters introducing the coinage followed by reference to each ruler and his/her coins in chronological order and finally the catalogue itself (in this case published as a second volume). Grierson's introductory chapters are excellent, especially those describing "Site Finds and Hoards" and "Written Sources and Coin Names". The discussion of different coin types is very helpful but brief, and the reader will benefit from reading Hendy's description in Volume 4 alongside Grierson's in Volume 5.

While making the material accessible, the convenient formula of the Dumbarton Oaks catalogues can deprive the reader of some of the

fascinating *disorder* of Late Byzantine numismatics. The coins themselves are demonstrative of a transformation in the status and prestige of the empire, but much more than in earlier periods one's understanding of Late Byzantine coins hinges upon a clear perception of the complexity of the coins' economic and historical context. Here Grierson's outline of contemporary coinages circulating in the Byzantine world is of primary importance, and readers will profit from searching out the works cited (p. 32) to form a more complete picture. It is beyond the scope of *DOC V* to trace in any detail the developments in Latin coins that were minted or circulated in the Byzantine world (for which one should consult D. M. Metcalf's 1995 *Coinage of the Crusades and the Latin East in the Ashmolean Museum*, 2nd ed.), but one might regret the minimal attention paid (in the catalogue and in the collection itself) to the contemporary coinage of Trebizond. Divorced from the minting traditions of the capital, these were nonetheless Byzantine coins and they help define the wonderfully complicated picture of Late Byzantine coinage.

The different style of Grierson's *DOC V* from Hendy's *DOC IV* adds depth to the series, but greater collaboration between the two would benefit the reader, especially concerning mint control and production. Grierson clarifies the obstacles that frustrate secure assignment of Palaiologan coins to specific mints and he updates Bendall's analyses of mint distribution (*DOC V*'s tables compiling data from prior studies and hoard evidence are particularly helpful), but one would like to see Grierson's discussion of Thessalonican issues extended backward to the 1220s and 1230s, when types and styles emerged that would continue to characterize Thessalonica's mint production in the early Palaiologan period. Continuity or discontinuity with production during Epirote and Nicene control would seem to have potential to refine our knowledge further of developments in the status of Thessalonica and of its complex relationship with the capital of the contracted empire in the Palaiologan period—key questions for historians and art historians as well as numismatists.

Dumbarton Oaks has made an invaluable contribution to Byzantine studies through its publication of the five volumes of Byzantine coins, the most comprehensive reference to date. Grierson's Volume 5 is a suitable finale to such a grand project. By its very nature a catalogue

cannot, and should not, tell the whole story of Late Byzantine coinage, but Grierson's expert organization and analysis has provided the best possible foundation for future work in this field that has long awaited attention.

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Philip Grierson and Lucia Travaini, *Medieval European Coinage, with a Catalogue of the Coins in the Fitzwilliam Museum, Cambridge 14: Italy (III) (South Italy, Sicily, Sardinia)*. Cambridge: Cambridge University Press, 1998. xxii, 794 pp., 63 plates. ISBN 0-521-58231-8. No price stated.

Late in 1998, twelve years after the publication of the first volume of *Medieval European Coinage* (henceforth, *MEC*), the last volume in the series, *MEC* 14, covering the coinage of continental southern Italy, Sicily, and Sardinia, has finally appeared in print. As of this writing, however, not one of the intervening volumes has yet been published. *MEC* 7, which is to cover the coinage of the Low Countries, was originally scheduled to be the second volume to appear in print, but the subject matter proved too complex and the number of coins too numerous for a single volume, and now the volume is to be published in two parts. The appearance of *MEC* 14 before the other volumes in the series was also the consequence of the departure from the project of Mark Blackburn, the Anglo-Saxon numismatist who co-authored *MEC* 1 with Philip Grierson. He was unable to continue in the role of co-author after his appointment as Keeper of Coins and Medals at the Fitzwilliam Museum, Cambridge, in 1991, and was replaced by Lucia Travaini, a specialist in the coinage of medieval southern Italy. Grierson has also worked extensively with southern Italian coins, and it was only reasonable for Grierson and Travaini to turn their attention to a subject with which they were both very well acquainted. Originally, southern Italy was to be covered in *MEC* 13, on central and southern Italy, with northern Italy covered in *MEC* 12, but the quantity of Italian material has made it necessary to allocate three volumes to Italy. *MEC* 13 will now be devoted exclusively to Rome and central Italy. Travaini has also stepped down from her

full-time role as co-author to take up an academic chair in numismatics at Milan, though she still intends to co-author *MEC* 13. Meanwhile, co-authorship of *MEC* 12 has now passed into the able hands of Michael Matzke, Assistant Keeper at the Fitzwilliam and a specialist in medieval Tuscan coinage and history, and Andrea Saccocci, who has written extensively on the coinage and history of northeastern Italy. In addition, this reviewer has recently joined Matzke and Saccocci to expedite the publication of *MEC* 12, although, it should be said, only after this review had been submitted. Other volumes are in various stages of preparation.

The long delay between the publication of the first two volumes to appear, *MEC* 1 and *MEC* 14, not to mention the fact that the intervening volumes are either in preparation or still in the planning stages, reflects, in addition to the expansion of the series and changes in co-authorship, the substantial proportions of the undertaking. The ambitious project was conceived by Christopher Brooke and Graham Pollard and is now being conducted under the auspices of the British Academy Committee for the Sylloge of Coins in the British Isles, and Gonville and Caius College, Cambridge. It was originally designed to be an expanded version of a sylloge, providing illustrations and summary descriptions of some 16,000 medieval western European coins in Grierson's private collection, now on permanent loan to the Fitzwilliam Museum, plus detailed accounts of the coinage of individual states or mints, extensive bibliographies, and useful appendices. The entire series was envisaged, in other words, as nothing less than a comprehensive guide to medieval western European coinage.

Byzantium, Muslim Spain, and medieval North Africa and the Middle East are not covered in the series, though the Balkans, Christian Spain and Portugal, and the Crusader states are covered. The omission of Byzantium is understandable, as Byzantine coinage is well covered in the volumes of Bellinger and Grierson's *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection* (Washington, DC, 1968–1973), not to mention Grierson's more concise *Byzantine Coins* (London, 1982). Byzantine coinage is further covered in Michael Hendy's *Coinage and Money in the Byzantine Empire, 1081–1261* (Washington, DC, 1969), in Cécile Morrisson's *Catalogue des monnaies byzantines de la Bibliothèque Nationale* (Paris,

1970), and in Wolfgang Hahn's *Moneta Imperii Byzantini* (Vienna, 1973–1981). The coinage of Muslim Spain, North Africa, and the Middle East is covered less well. The catalogues assembled by Paul Balog and George Carpenter Miles have gone a considerable distance towards redressing the balance, but the coverage is uneven and its quality, aside from the works of these two distinguished numismatists, tends to be varied. The absence of a volume in the *MEC* series covering the Islamic coinage of the medieval Mediterranean is somewhat problematic, especially in so far as *MEC* 14 is concerned, since so much of the early coinage of medieval Sicily and southern Italy was either Islamic or based on Islamic models. Still, it would be unreasonable to expect the series to cover the coinage of the medieval Islamic world. The embrace of the series simply reflects Grierson's own interests as a collector, and the task of compiling a comprehensive guide to the coinage of the medieval Islamic world must await the attentions of a specialist or group of specialists in Islamic numismatics. We can only hope that whoever undertakes the challenge demonstrates an aptitude for the task approaching that displayed by Grierson and his co-authors.

The two volumes of *MEC* that have appeared thus far certainly augur well for the series as a whole and its high ambitions. For Grierson, the entire series constitutes the crowning achievement of an academic career rich in achievements. Like *MEC* 1, the new volume will be essential in most university libraries, particularly those with strong holdings in medieval history and/or numismatics. Because of the technical nature of numismatics, these volumes will be of little use to all but the most motivated undergraduate students, but they will be of enormous use to both graduate students and especially professional scholars. These volumes will be expensive, justifiably so, and their high cost will deter many scholars from acquiring a copy of their own. This makes it even more important that libraries supporting medieval programs acquire the entire series. Experts in numismatics as well as the uninitiated will appreciate the attention to detail in the texts of both volumes and their extensive bibliographies. In the new volume, readers will also appreciate the appendices on hoard and coin finds, heraldry, Arabic legends on Norman and Hohenstaufen coins, metrology, metal content analyses, and medieval numismatics in

South Italy, Sardinia, and Sicily. The glossary will be particularly useful for those who approach the text without much experience in numismatics, as it covers not only terms peculiar to southern Italian numismatics but also terms commonly used in the numismatic literature more generally.

The appendices and glossary are followed by 63 high-quality black-and-white photographic plates, covering 150 pages, which depict the coins at actual size or, where indicated, at two times actual size. The technical descriptions that supplement the plates provide the coin legends, mostly in outline but sometimes in full. They also give the weight of each specimen and the die-axis expressed in degrees to the nearest 10° and identify the metal of each coin; for most of the gold coins they provide the results from analyses of metallic content, giving the specific gravity of the specimen and a conservative measure of the percentage of gold in the coin. They give the standard references for each specimen or class of specimens which, at a minimum, identify individual coins according to type, and they identify the Cambridge collection to which individual coins belong. For each group of coins, the descriptions indicate the pages in the text on which the respective commentary can be found and, where appropriate, individual coins in the new volume are cross-referenced with entries in the first volume.

The plates and the accompanying descriptions are followed by several concordances with other published works. These include Memmo Cagiati's *I tipi monetali della zecca di Salerno* (Caserta, 1925), Rodolfo Spahr's *Le monete siciliane dai Bizantini a Carlo I d'Angiò* (Zurich and Graz, 1976) and the same author's *Le monete siciliane dagli Aragonesi ai Borboni* (Basel and Graz, 1982), volumes 18 and 19 of the *Corpus Nummorum Italicorum* (Rome, 1939 and 1940, respectively), Travaini's "Hohenstaufen and Angevin Denari of Sicily and Southern Italy" in the *Numismatic Chronicle* (1993) and her *La monetazione nell'Italia normanna* (Rome, 1995), and M. Crusafont i Sabater's *Numismatica de la corona catalano-aragonesa medieval* (Madrid, 1982). A concordance is also provided for the pertinent Italian coins in the Grantley collection, which included, astonishingly, about 50,000 specimens and was dispersed in eleven sales during the two years after the death of Lord Grantley in 1943. Three indices follow the concordances: these include an index for Latin, Greek, and Kufic coin legends, a

general index, and an index of hoards and single coin finds represented in the catalogue.

The text itself begins, and rightly so, by stressing the differences between the coinage of southern Italy and Sicily, and the coinage of northern Italy and western Europe more generally. The coinage of continental southern Italy owed much to Byzantine traditions, while Sicilian coinage was based on Arab models. In both southern Italy and Sicily, the coinage system in the early Middle Ages was based on gold and copper. The coinage in most of western Europe, by contrast, was silver-based, following the Carolingian system. The authors divide the evolution of southern Italian and Sicilian coinage into three phases: 1) pre-Norman and Norman, 2) Hohenstaufen and Angevin, and 3) Aragonese. The pre-Norman and Norman gold coinage was essentially Muslim in style and at first purely epigraphic, based on the Arabic quarter-dinar of Sicily and North Africa, which circulated widely in the central Mediterranean. Eventually, Christian elements were introduced, still largely epigraphic, displacing the traditional Muslim profession of the faith. The silver coinage of Sicily was also initially Arabic, but it was displaced by the Byzantine *ducalis*. The early copper coinage was Byzantine. The gold coinage for the most part continued to follow Arabic models at the beginning of the Hohenstaufen period, though the Muslim epigraphy was reduced. Latin legends, as well as symbolic elements, were becoming increasingly common under Henry VI (d. 1197), and they completely replaced Arabic legends in the issue of 1221, though coins with pseudo-Kufic legends continued to be struck. In 1231, in a major artistic innovation, Frederick II issued the classically inspired gold *augustale*. This was still more than two decades before the appearance of the gold coinages of Florence and Genoa. A more significant innovation may have been the replacement of the essentially Byzantine copper coinage by more "characteristically western" billon coins, which introduced new elements into southern Italy transmitted by northern *denari*. The initial gold coinages of Charles I of Anjou incorporated several changes that further assimilated southern Italian coinage to the coinage of northern Italy and western Europe. In 1278, the gold *tari* was abolished, and the striking of gold coins had ceased entirely by the beginning of the fourteenth century. The billon *denari* introduced during the Hohenstaufen period

continued to be struck under Charles following the same general pattern. The history of the coinage of southern Italy and Sicily during the middle ages, then, was characterized by a gradual shift away from Arab and Byzantine models, and assimilation to the types of coinage that prevailed in the north of Italy and in the European west more generally.

For practical purposes, the text can be divided into two parts. In the first part, consisting of the first five chapters, the arrangement is strictly chronological, beginning roughly in the ninth century and continuing until the time of the Sicilian Vespers in 1282. An introductory chapter is followed by chapters covering the coinage of the pre-Norman period, the Normans, the Hohenstaufens, and Charles I of Anjou. Within each chapter, the arrangement typically follows the succession of potentates, though certain of the chapters demand some variation on this general scheme. As a matter of necessity, the second part of the text is arranged both chronologically and geographically. After the outbreak of the war of the Sicilian Vespers in March of 1282, Sicily pertained to the Aragonese, while the Angevins continued to hold sway in continental southern Italy until the fifteenth century. Sardinia became an Aragonese dominion in 1323 and was united with Sicily from 1416, which provides the rationale for the inclusion of Sardinia in a volume otherwise devoted to Sicily and southern Italy. Between 1442 and 1458, and again from 1503, Naples was also controlled by the Aragonese, uniting southern Italy, Sicily, and Sardinia under Spanish rule. Chapters 6 through 8 for the most part cover the period after 1282, treating in succession Naples under the Angevins, Aragonese Sicily to 1416, and Sardinia from Byzantine rule to 1416. Chapter 9 deals with the period of the unification of Sicily, Sardinia, and Naples in the fifteenth century, and chapter 10 focuses on the period from 1458 to the early sixteenth century.

Aside from the catalogue itself and the commentary, the text provides a critical summary of the pertinent numismatic and historiographic literature. This is important because most English-speaking scholars, including some of those who specialize in Italian subjects, will be unfamiliar with the vast bibliography. Much of the research on the Italian south, not surprisingly, is the work of Italian authors, and a substantial proportion of the numismatic literature in particular

appears in essentially local publications or in publications devoted strictly to numismatics, which is to say in relatively obscure publications supported, outside of Italy at least, only by the better libraries. As a consequence, a lot of interesting work on southern Italy escapes the attention of all but the specialists. *MEC* 14 is not only a welcome addition to this literature, but it also provides English-speakers with a comprehensive guide to southern Italian numismatics, the first of its kind and surely the best to date in any language.

It is really difficult to find fault with this work. The expertise of the co-authors in the fields of medieval southern Italian numismatics and history is attested by the fact that the bibliography includes 24 contributions from Grierson and 48 contributions from Travaini, plus several others that Grierson and Travaini have co-authored with other scholars. The writing throughout is lucid enough to be accessible to readers without specialized training in numismatics. At the same time, thanks to the appendices, specialists will not need to wade through detailed explanations of concepts and terminology long familiar to numismatists. There are no footnotes, which is fair enough in that much of the text reads like an extended footnote, teeming with detailed minutiae. The method of citation is somewhat cumbersome and requires a lot of page-flipping, but it seems appropriate for the format. The reader will encounter the odd typographical error, such as the one appearing in the bibliography at the top of page 535 that gives the date for a contribution from this reviewer as 1977, more than a decade before the journal in which it appeared had begun publication and while the author was still in his teens! The year of publication should have been given as 1997. A few such errors are to be expected, especially in a work of this magnitude, and in fact there are sufficiently few typographical errors as to be negligible. Suffice it to say that Grierson and Travaini's recent contribution to the *MEC* series will be the standard reference in medieval southern Italian numismatics for many years to come. We can now eagerly await the publication of the intervening volumes in the series, but not too impatiently, because scholarly work of this caliber requires time.

WILLIAM R. DAY, JR.

Department of Medieval and Modern History,
University of Birmingham

ACQUISITIONS FOR 1999 IN THE AMERICAN NUMISMATIC SOCIETY COLLECTION

(PLATES 31–34)

GREEK

The Greek Department received several major gifts and some very rare and interesting coins were purchased—in all, 277 coins were acquired. In 1999, the ANS received three major gifts of Greek coins. The first was from Herman Miller who donated thirty-one Greek coins from his collection. They are all outstanding specimens from a variety of mints. Among the most spectacular is a high-relief tetradrachm of Rhegion in Bruttium, with a facing lion's head on the obverse and a head of Apollo to left on the reverse, with a laurel leaf and bay behind the neck (no. 1; Herzfelder 103); the legend reads **PHΓINON** rather than **PHΓINOΣ** as in the earlier groups. The head usually faces right; this is the only die with short hair facing left. Apollo was the main god of colonization, Apollo Archegetes, and as such enjoyed an important cult in most of the newer Western settlements. This coin belongs to Herzfelder group V, and on hoard evidence can be dated to the beginning of the fourth century BC, before the capture of the city by Dionysios I of Syracuse in 387 BC. The Ognina hoard (*IGCH* 2120), buried around 400 BC (Boehringer 1978) contained examples of Rhegion down to Herzfelder 90.

Another example from this gift is an electrum stater from Kyzikos (no. 2) from the beginning of the fourth century BC (von Fritze 1912:12, no. 155). The obverse depicts a youthful Dionysos reclining to left on a seat covered by a panther skin. He wears an ivy (?) wreath, a himation draped around his lower body, otherwise naked; he holds a kantharos in his right hand; his left arm rests on the seat (?); next to his knee the thyrsos decorated with a fillet; below a tuna fish, the badge of Kyzikos.

The second major donation came from Louis Zara in memory of Margaret Thompson. It consists of 213 coins (183 Greek, 2 Roman, and 28 Byzantine) that mainly supplement our collection of coins from ancient Palestine (SNG ANS 7) and South Arabia but also from Phoenicia. Among them are many Jewish coins—for example, an eighth of a shekel of Year 4 (no. 3) with a chalice with pearly rim and around the Hebrew inscription “Ligulat Zion” [for the redemption of Zion] on the obverse and on the reverse a lulav (consisting of myrtle, palm tree, and willow tied together) flanked by an ethrog on either side and around the legend “Year 4” in Hebrew. The lulav and the ethrog are used to this day in the celebration of Succoth, the Feast of the Tabernacles.

Among the Roman provincial coins of the Zara collection is an unpublished bronze of Volusian from Tyre (no. 4) with a bust of the emperor on the obverse and on the reverse an hexastyle temple with a statue of Athena—or better Roma—inside. The goddess is seated to left wearing a helmet, resting her left arm on a spear, a shield at her side, and in her outstretched right hand she probably holds a pair of statuettes, perhaps on a prow; the type of the seated goddess alone without the temple is known for Valerian (*BMC* 453–456) and on the larger design the statuettes are clearer.

Ben Damsky donated four large Roman provincial bronzes from Thrace. The most spectacular—perfect to close the millennium and as a favorable omen for the new one—is a bronze of Maximinus Thrax from Anchialos (no. 5). The obverse shows a bust of Maximinus in three-quarter view to the right wearing laurel wreath, cuirass, an aegis on the left shoulder, and a Medusa medallion on the chest, with legend **AVT MAZIMEINOC EVCEBHC AVT**. The reverse presents Zeus seated in all his majesty on a throne to the left, holding a patera in his right hand, resting on a long scepter with his left hand, an eagle above his head. Left in field the chariot of Helios appears, recognizable by his radiate crown and the chlamys fluttering behind his shoulders, galloping toward the center. To the right, Selene, in a biga of bulls, holding a torch, is galloping toward the center as well. Below on the left, we see a reclining figure, holding a cornucopia in her right arm and a branch in her extended left; she is most likely Ge, a personification of the earth. To the right another reclining figure, wearing a

helmet with crab legs, holding a prow in her right hand and a rudder in her left arm is thought to be Thalassa, a personification of the sea. Between them is the ethnic **ΟΥΛΠΙΑΝΩΝ ΑΓΧΙΑΛΕΩΝ**. This central figure is encircled by the Zodiac, rendered as a circular ring, divided into compartments, with the signs represented clockwise, beginning with Aries above the eagle in the center, followed by Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius, and Pisces. Representations of the full cycle of the Zodiac are known from twelve different mints. The one from Anchialos was unknown to Strack (Münzer and Strack 1912). The coin was struck between February/March 235 and mid-April 238). Maximinus was born in Thrace or Moesia Inferior in AD 172 or 173 (SHA) and proclaimed emperor in Mainz in 235. He fought the Dacians and Sarmatians and was killed by his own soldiers in 238. The nickname "Thracian" is only recorded after the fourth century. His coinage at Anchialos is very important. There was apparently no coinage in that city between the death of Septimius Severus in 211 and the end of the reign of Alexander Severus in 235. Anchialos was probably founded in the fourth century BC, became part of the Roman province of Thrace under Claudius in AD 46, and acquired the title "Ulpia" under Trajan.

The second Zodiac coin donated by Ben Damsky is a large bronze (no. 6) from Perinthos (Finarte, *Asta* 995, 27 November 1995, 1165 (Fontana Coll.) Schönert-Geiss 859), struck under Gordian III (AD 238–244), which shows a slightly simpler version of Zeus enthroned in the center of the Zodiac: here the personifications of the universe—sun, moon, earth, and sea—are missing. The Zodiac symbolizes the power of the emperor over the universe: the emperor identified with Zeus Kosmokrator. The image evokes apotheosis and immortality.

We would like to thank for their generosity Ben L. Damsky, Emily Fowler, Philip Kinns, Herbert L. Kreindler, Richard Gordon McAlee, Herman Miller, Hyla A. Troxell, Dr. Paul Peter Urone, Dr. Arnold-Peter C. Weiss, and Mr. Louis Zara.

Among the interesting purchases are two archaic silver didrachms of Selinous in Sicily (nos. 7 and 8) from the same obverse die. This die link clearly shows for the first time that the first group of coins from Selinous, with the characteristic incuse square divided diagonally into twelve segments, and the second group, with a selinon leaf added to

the incuse square, followed each other without interruption. The 1985 Selinus hoard (Arnold-Biucchi *et al.* 1988) did not contain any examples of group II, so the transition from simple incuse to leaf in incuse square must have occurred around 500 BC.

From the famous private collection exhibited for many years in the Basel Museum (Antikenmuseum Basel und Sammlung Ludwig, 1988) the ANS was able to purchase a very rare silver nomos from Terina in Bruttium (no. 9), dating to about 460 BC (NAC 13, 8 October 1998, 235). It belongs to the very first issues of the city (Regling 1906:7, no. 2), hitherto unrepresented in the ANS collection (SNG ANS 3, 801 ff.). It is the second obverse die recorded, and the reverse was unknown (Holloway and Jenkins 1983:21, no. 3). It is a beautiful example of early classical style.

Herb Kreindler donated a very rare silver litra (no. 10) struck jointly by Adranon and Piakos in Sicily (ex CNG/NAC 40, 4 Dec. 1996, 819; see Jenkins 1962) with the head of a nymph and ΠΙΑΚΟΝ on the obverse and ΑΔΡΑΝΟΝ and a butting bull on the reverse.

A rare bronze coin of Mytistratos in Sicily was acquired by purchase (no. 11). It shows on the obverse a bearded head to the right wearing a conical cap, a pilos, decorated by a laurel wreath and the letters ΜΥΤΙΣ. The reverse shows a free horse running to the right. There seem to be two letters below his belly. Very little is known about the city of Mytistratos. The site has been identified near modern Marianopoli. These bronzes may date to the time of Timoleon. They are extremely rare (Calciati 1987:294, no. 3) and relate to the bronze coins of Lipara both in types and in the weights.

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CARMEN ARNOLD-BIUCCHI

ROMAN AND BYZANTINE

The year's acquisitions spanned virtually the entire period from the early Republic to the fall of the Byzantine Empire. Noteworthy in the former category were five early denarii with symbols and monograms (Rostrum tridens, Trident, Crescent, Fly, GR) acquired by purchase in addition to a large collection of imitations of Republican bronze formed by Richard Schaefer. The chronology and attribution of these coins—most of which copy semisses—is very difficult, and the style ranges from semi-barbarous (no. 12) to quite successful (no. 13). From the early empire the most significant acquisitions were five denarii of the civil wars of 68–69, the gift of Ben Lee Damsky, which complement his other donations of recent years. These issues are variously attributed to Spain (no. 14), Gaul (no. 15), and Africa (no. 16), and most are scarce to rare. Mr. Damsky's recent donations have more than doubled the holdings of the ANS in this series. T. V. Buttrey also gave a rare denarius of Domitian struck in 95/96 (no. 17; compare *BMC* p. 344*) which shows a woman running l. carrying bird and caduceus; the identity of the figure is not at all clear. Thomas Tesoriero gave a sestertius of Trebonianus Gallus (no. 18) that not only has an exceptionally well-preserved portrait but bears the Este or Gonzaga countermark. The Byzantine Empire was represented by contributions from Dr. and Mrs. James H. Schwartz in memory of Morton Smith and from Louis Zara in memory of Margaret Thompson. Other donors to the department included Mrs. Mamie Gettys Atkinson, Curtis L. Clay,

Oleg Grabar, David Hendin, George N. His, Mrs. G. E. Metcalf, and Dan S. Wages.

WILLIAM E. METCALF

ISLAMIC AND EAST ASIAN

Among the ANS purchases was a little copper *fals* with the Hijra date 117 (no. 19), or 735/36, showing a Sen Murv, a kind of Persian mythical bird-dragon. This coin was issued more than ninety years after the Muslim conquest of Iran and almost forty years after the introduction of purely Arabic Islamic coinage. Nevertheless, such old Persian images occur frequently on Iranian Muslim coins of the eighth century, a phenomenon yet to be explained or localized.

Another dirham (no. 20) is a remarkable phenomenon in the Abbasid coinage of Baghdad: a rare coin. This mint was at the center of the empire and normally its issues are among the most common in any year, but not in the early years of the reign of Harun al-Rashid, from 786 to about 790, perhaps because this caliph made his residence elsewhere during those years. This date, 172 Hijri or 788/89, was not previously represented in our collection nor in most others, being one of four known examples of this variety. An unusual feature of the series is the double border surrounding the reverse central field inscription. What looks like two closely spaced circles is in fact an inscription with tiny but elongated letters spelling out, in Arabic, "Among the things ordered by the Servant of God, Harun, the Commander of the Believers". The dirham was purchased from the Brussels dealer Jean Elsen's fixed price list 203, coin 995, with the assistance of A. S. DeShazo.

Our modern Chinese collection was enriched this year by Mamie Gettys Atkinson's gift of the collection formed by her late husband, Air Force Col. Harry W. Atkinson, who began collecting twentieth-century Chinese coins during his military service there from 1946 to 1949. Mrs. Atkinson carried out her husband's wish to have his collection go to the ANS. We naturally are very grateful to them both. The twenty-four Chinese coins include provincial and central issues of the late Qing dynasty, of the Republic of China, of the provisional

Communist governments of the revolutionary era, and of the Nationalist Government in Taiwan. Many are quite scarce, valuable, and new to our collection, of which the most spectacular example is a Qing dollar of Zhejiang issued in 1897 (no. 21), one of the very earliest Imperial Chinese machine-struck coins. This might be the second known example. It has the same obverse die as a 1902 silver dollar from the same mint already in the ANS collection (no. 22), but the die was re-polished for the latter striking.

The late William B. Warden, Jr., Chair of the Society's Committee on Islamic Coins, continued to support our collection with important gifts, as well as by assistance in purchases and intervention on our behalf with other collectors and dealers. He generously made frequent donations of important single coins or small groups he encountered in his business. To illustrate the range of his interests, a Sasanian silver drahm (no. 23) of the emperor Narses (AD 293–303) which is not to be found in any standard catalogue; a Qarakhanid *fals* (no. 24) of al-Shash mint (at the site of modern Tashkent) with the date AH 403 (1012/13); and a Kakwayhid dirham (no. 25) of Isbahan, dated 408 (1017/18).

We gratefully acknowledge once again our several donors, including Mrs. Atkinson, Bill Warden, Oleg Grabar, Wayne Sayles, Jyoti Rai, Alexander Ritchie, H. Edmund Hohertz, James L. Whitaker, and Leonard G. Mazzone, and thank our faithful volunteers who help the work of the departments go forward, David Jen, Jyoti Rai, and Kenneth MacKenzie, as well as our Hamad Fellow, Roxani Margariti of Princeton University, whose invaluable assistance has led to the renewal of her fellowship for a third year in 1999–2000 and a fourth, 2000–2001.

MICHAEL L. BATES

MEDIEVAL

A significant gift this year to the Medieval collection was a donation from Harrington Manville, which allowed the acquisition of several gold crusader fragments, of the type described last year in connection with the bequest of 223 such pieces from the estate of John Slocum.

While the new pieces present no obvious keys to this enigmatic coinage, every new bit of evidence is useful in reconstructing a coinage which is yet to be known from a single whole specimen (nos. 26 and 27).

A purchase of 58 Venetian coins exemplifies some of the problems of medieval numismatics in general, and of such study in the United States specifically. The coins originally formed part of a large miscellaneous lot sold by a British dealer who said they derived from an old collection in Britain. One coin is a pierced small denomination from the sixteenth century and seems an intrusion on the basic group, which comprises a series of coins of the *grosso* denomination in the name of doges who reigned from 1268 through 1457. As there is much duplication of varieties in the forty-one coins of the latest issue, it is likely that at least these pieces derive from a hoard rather than an assembled collection. The earlier pieces represent a "tale" of a century and a half, which is quite long for a silver hoard from this period and tends to call into question their derivation from the same hoard, especially as there were reductions in both weight and fineness in the denomination over the period. The fine preservation of some of the earlier pieces also argues against their circulation for such a long period before burial.

However, this parcel as a whole has a strong similarity to a hoard of Venetian coins found in Beirut in 1963, sharing the same starting and ending issues (Braun and Huckles 1966, 1967). That find in itself is problematic, as it is known only from the publication of two parcels purchased from a Lebanese dealer who did not know if they were from the same hoard. Photos of enough of the coins of the earlier parcels are published to be certain that our coins were not part of either of them.

The closing issue of both this parcel and the earlier hoard is the reign of Francesco Foscari, 1423 to 1457. This 24-year reign can be broken down for the *grosso* denomination by a weight reduction in 1444, which resulted in smaller as well as lighter coins; both large and small *grossi* are represented in our parcel and the Beirut hoard (nos. 28 and 29). More precision can be gotten from the initials of the mint master, which appear on the obverse and correspond to annual office-holders, most of whom are known from documents. Both our parcel and the Beirut hoard include the initials of men documented as

working in the years up to 1450 and none for those of the remaining seven years of Francesco Foscari's reign. Therefore, it seems likely that the coins the ANS has acquired represent a third, previously unknown, parcel of the 1963 Beirut hoard (one of only a few known Levantine finds of a coinage which is documented in written sources as dominant in the eastern Mediterranean in the later Middle Ages).

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MEDALS AND DECORATIONS

The medals collection has benefited greatly this year from a number of important gifts, mainly from long-term supporters of the department. Stephen K. Scher gave us two cast medals by the early nineteenth-century French sculptor David D'Angers, including one of the revolutionary writer Louis-Marie Prudhomme (no. 30). Daniel Friedenberg donated a collection of forty medals by Jewish artists and on Jewish themes, including the beautiful cast portrait of Rosa Lavorosa by Alfred Loewenthal of Vienna from the period after World War I (no. 31).

Professor Zvi Griliches donated a collection of medals he had assembled of the work of his distant relatives, Avenir and Avraam Griliches. These men, father and son, were successively chief engravers at the Saint Petersburg Mint at the turn of the last century, a great achievement for observant Jews from Vilna. Typical of the elegant classical style of both Griliches engravers is the medal by the son from 1896 depicting Maria Fedorovna, mother of Tsar Nicholas II, for women's educational achievements (no. 32). Professor Griliches (who died shortly after this gift was announced) made a truly Solomonic disposition of his patiently assembled collection by giving to the Jewish Museum those pieces relevant to their collecting interests and donating the remaining forty-seven medals to the ANS.

William F. Metten, Jr., donated the gold medal awarded to his uncle in 1940 by the Society of Naval Architects and Marine Engineers for the design of the *Pensacola*-class cruisers (no. 33). The medal depicts Admiral David Taylor, who had himself served on the *Pensacola* when it was George Dewey's flagship. The medal was created in 1936 by Anthony de Francisci, designer of the 1921 Peace Dollar and recipient in 1927 of the Society's J. Sanford Saltus Award for Signal Achievement in the Art of the Medal.

Paul de Groot continued his gifts of modern Dutch medals, including a 1983 portrait by Jos Reniers of his namesake Hugo de Groot, the seventeenth-century jurist and philosopher usually known by his Latin name of Grotius (no. 34). Another large gift, also following previous generous contributions, was a collection of contemporary German medals from Dr. Richard Peterhänsel. Other donors to the Medals and Decorations Department this year included Catherine E. Bullowa-Moore, Barry Johnston, Scott H. Miller, Jyoti Rai, Dr. Ralph Sonnenschein, William B. Warden, Jr., the Archaeological Institute of America, and the Gateway Coin Club.

MODERN, LATIN AMERICAN, AND US

As in past years, we use this space to publish the replicas of the Gallery Mint Museum. Anthony Terranova this year donated to us the fine copy of a 1796 eagle (no. 35). Evan Kopald, when he found that we had a Gallery Mint Museum Liberty Cap cent with **COPY** on the reverse (no. 36, gift of Anthony Terranova) but none with **COPY** on the obverse, donated a cent to fill that gap (no. 37). Some of the die varieties for Liberty Cap cents are illustrated in John Wright's article for *Penny Wise* in March 1998 on page 77.

Dr. Larry Cutler donated an interesting selection of Nevada fiscal paper. It included a memorandum of silver bullion deposited at the US Mint in Carson City (no. 38). As one can see, the bullion is described as "Bars". Much bullion came to the Mint in this form. Precious metal ore is often found mixed with quartz. This quartz is taken to stamping mills, and the slurry is refined using mercury, chlorine, or cyanide. For convenience of transport the metal, a mixture

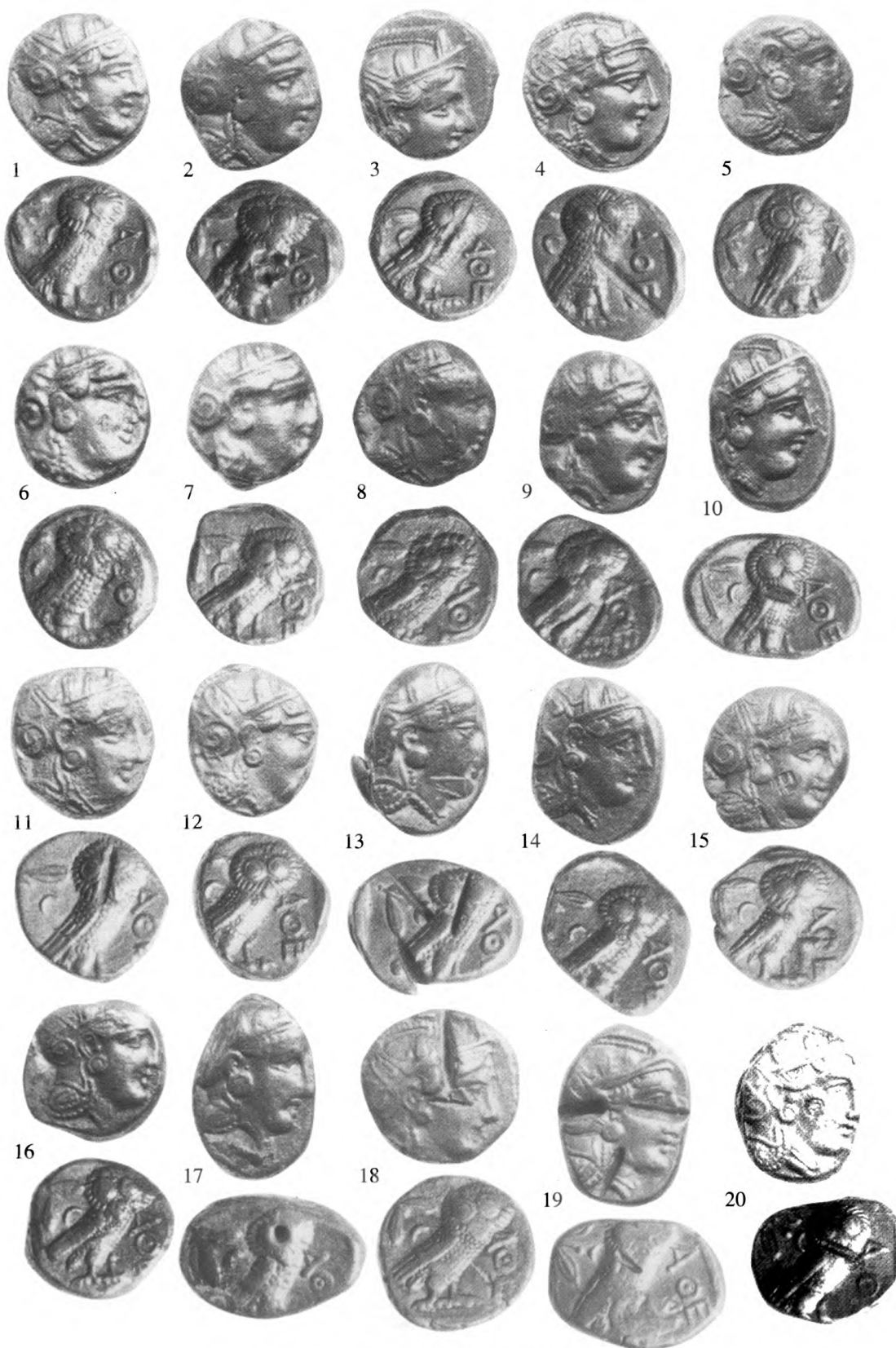
of silver and gold, is cast into bars. This is known as "doré bullion", which is defined as unparted gold and silver in bars. These bars do not bear a mark of assaying upon them. The Eagle Star Mining Company, for example, just marked its bars **ES** plus a serial number. The bars were only assayed when they arrived at the mint and were refined into metal suitable for coinage, and the Mint's memorandum of silver bullion confirms this. It evaluates the bullion only after melting.

R. H. Ponterio donated examples of the Charles and Joan coinage of Mexico that were not represented in the Society's collection. These donations are particularly welcome, because our collection is relatively strong in the area. We show a 4-reales coin from the second series ("with water"), issued by assayer A; the variety is Nesmith 62a (no. 39).

Other donors to the Modern, Latin America, and US Department include the Banco Central do Brasil, Mrs. Mamie Gettys Atkinson, Vladimir Belayev, Paul Bosco, Mrs. Catherine E. Bullowa-Moore, Dan Freidus, H. Edmund Hohertz, Emmett McDonald, Mark and Lottie Salton in memory of Felix Schlessinger, Dr. and Mrs. James H. Schwartz, Alan M. Stahl, and Katalin Uzdi.

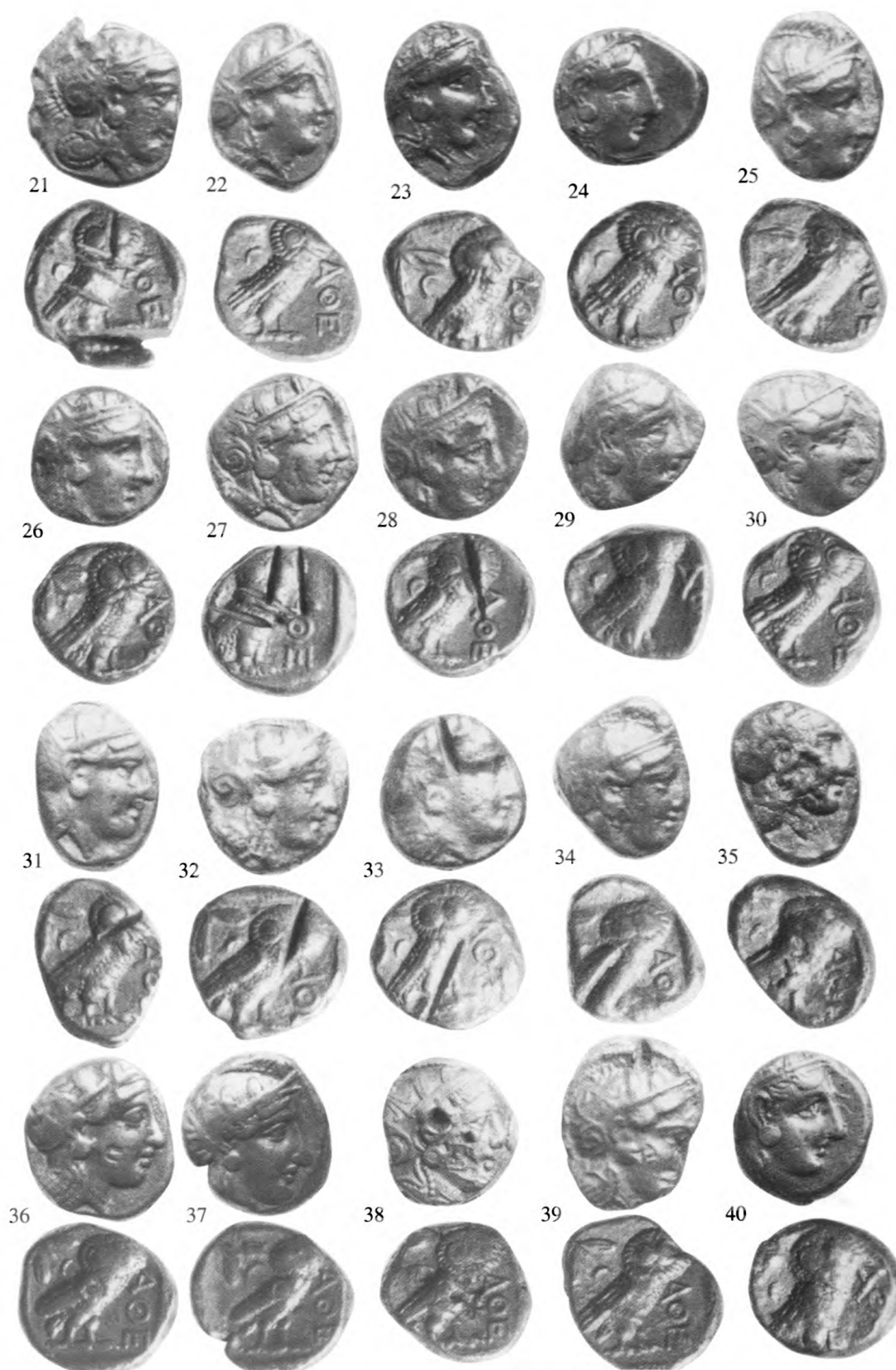
JOHN M. KLEEGERG

PLATES

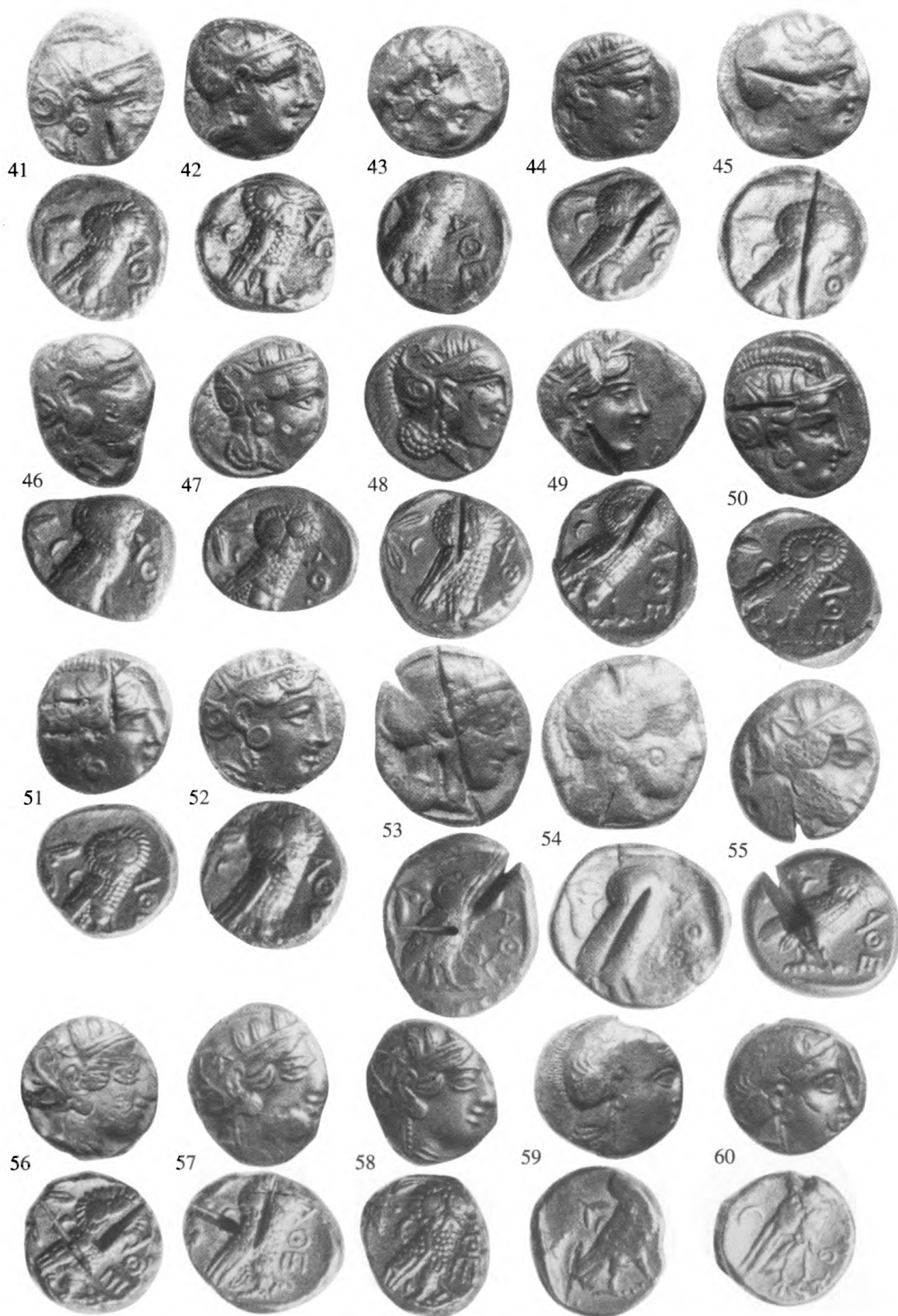


Owls from the 1973 Iraq Hoard

Plate 2

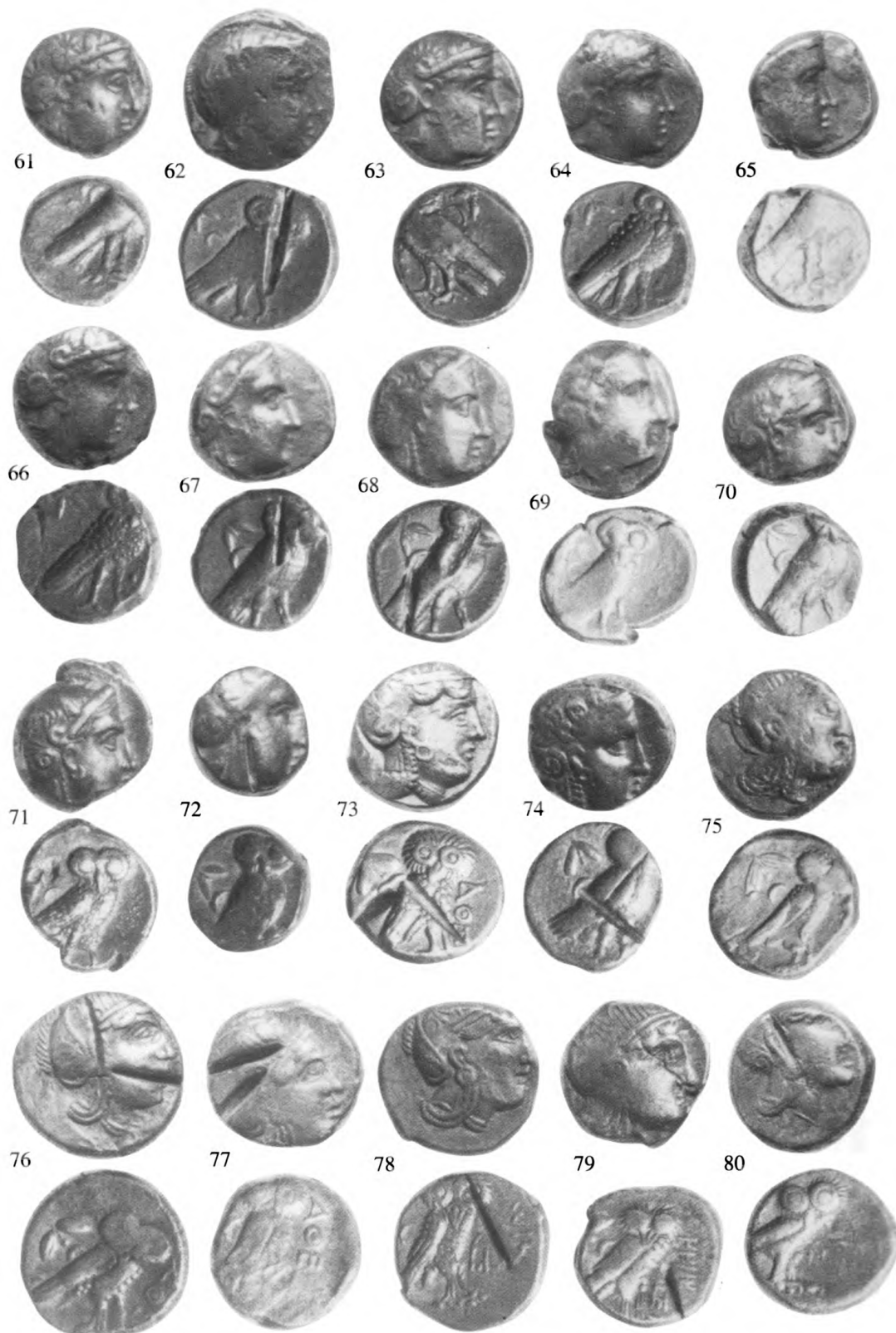


Owls from the 1973 Iraq Hoard



Owls from the 1973 Iraq Hoard

Plate 4

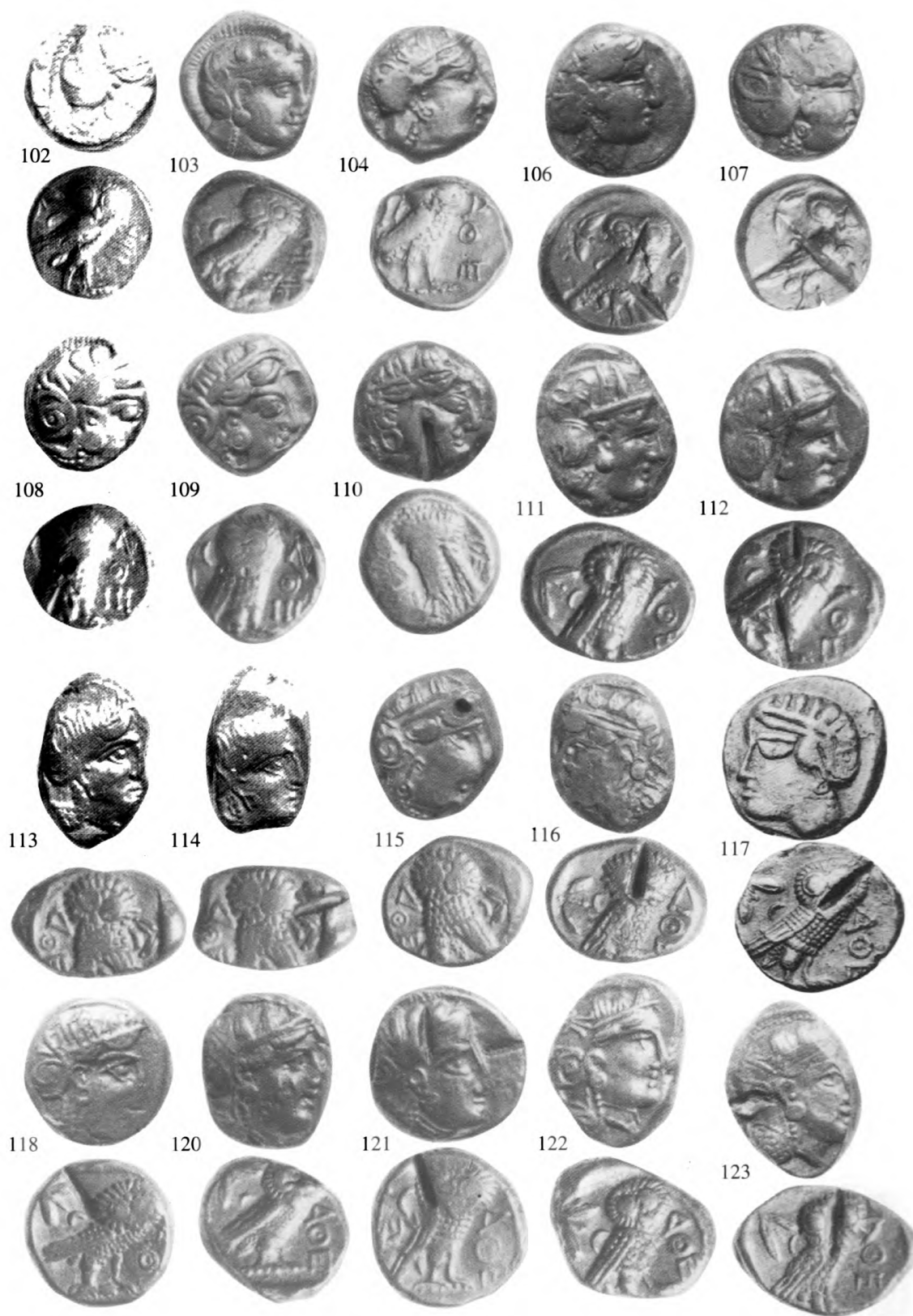


Owls from the 1973 Iraq Hoard

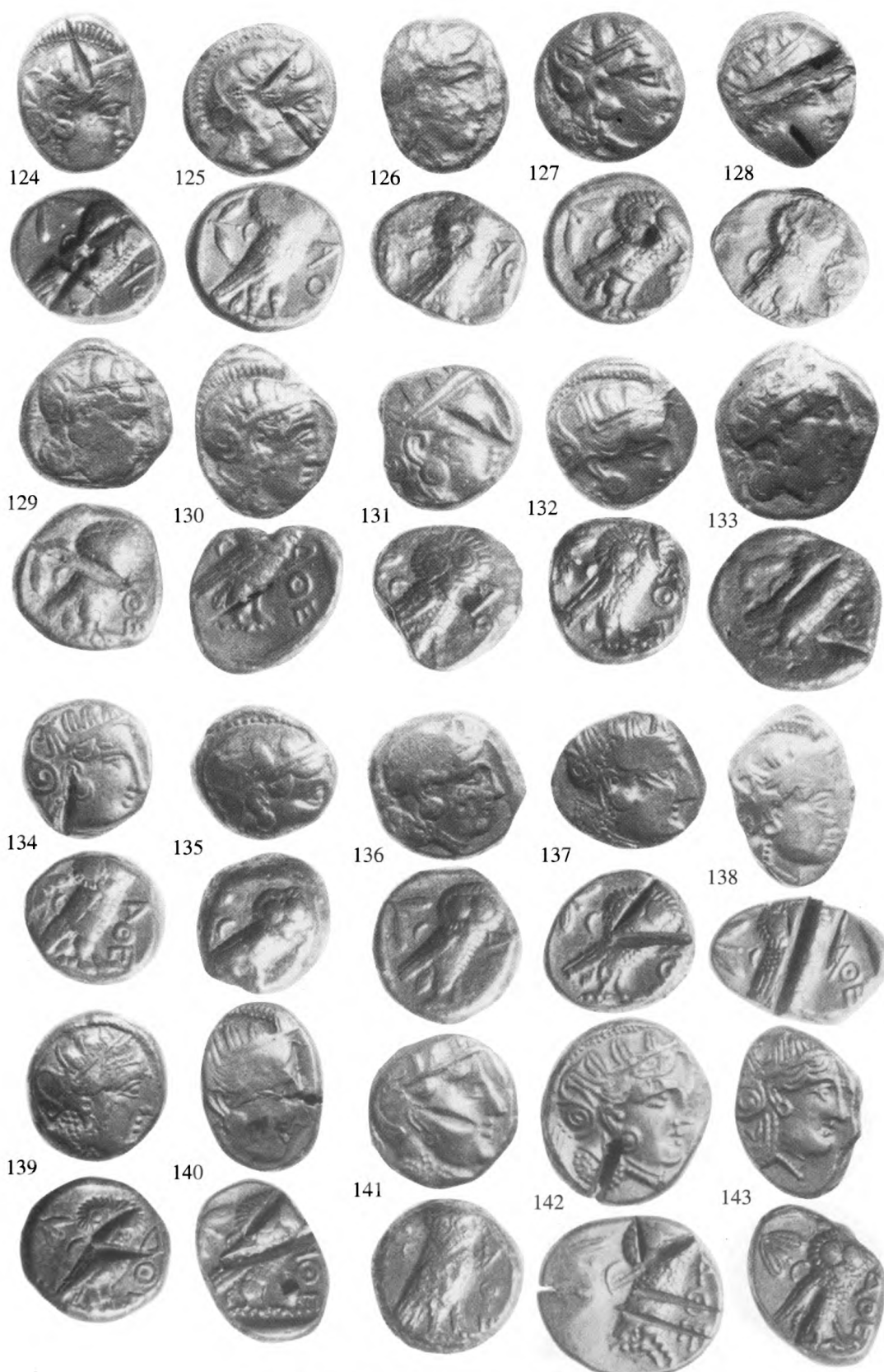


Owls from the 1973 Iraq Hoard

Plate 6

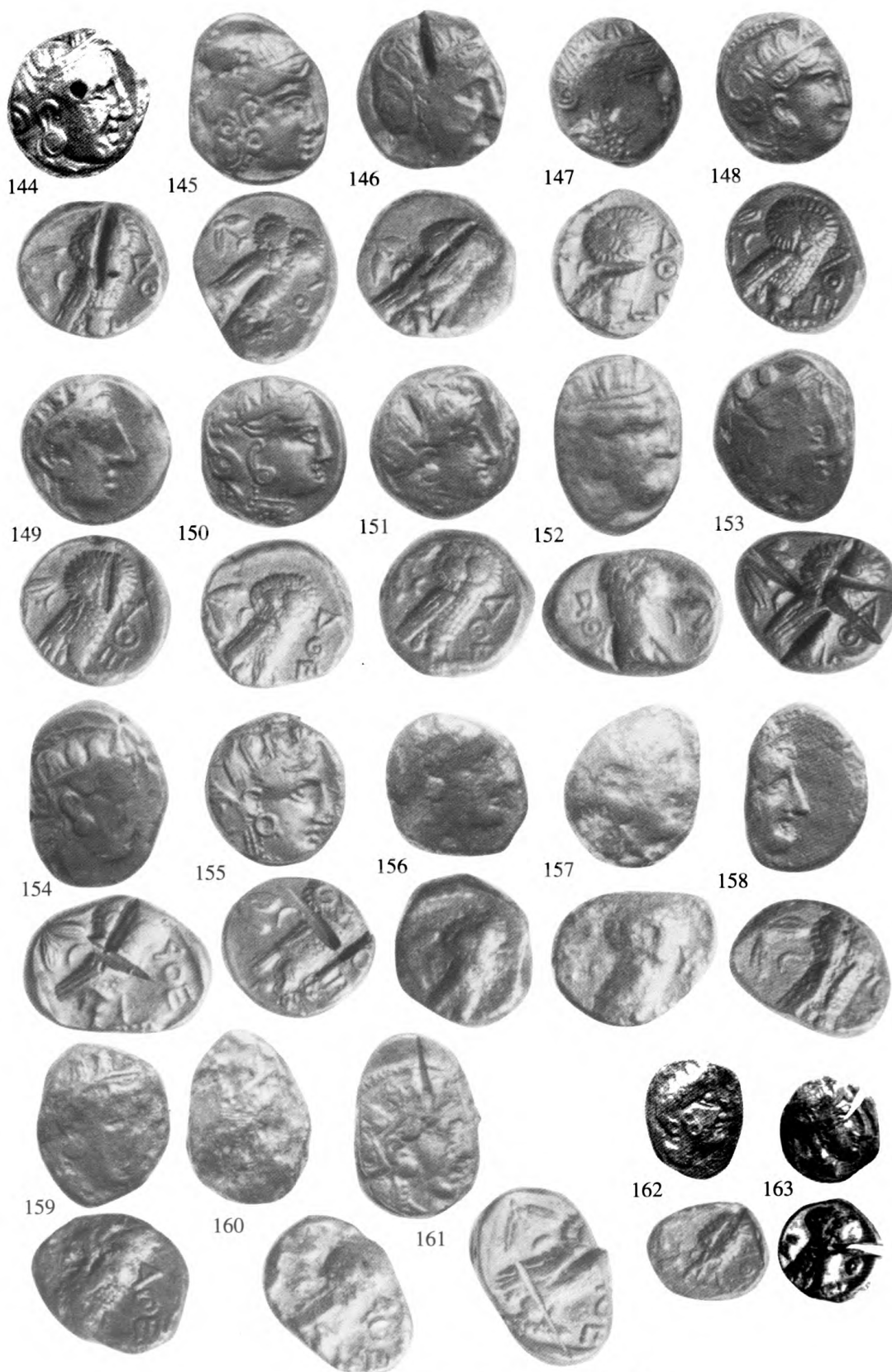


Owls from the 1973 Iraq Hoard



Owls from the 1973 Iraq Hoard

Plate 8



Owls from the 1973 Iraq Hoard

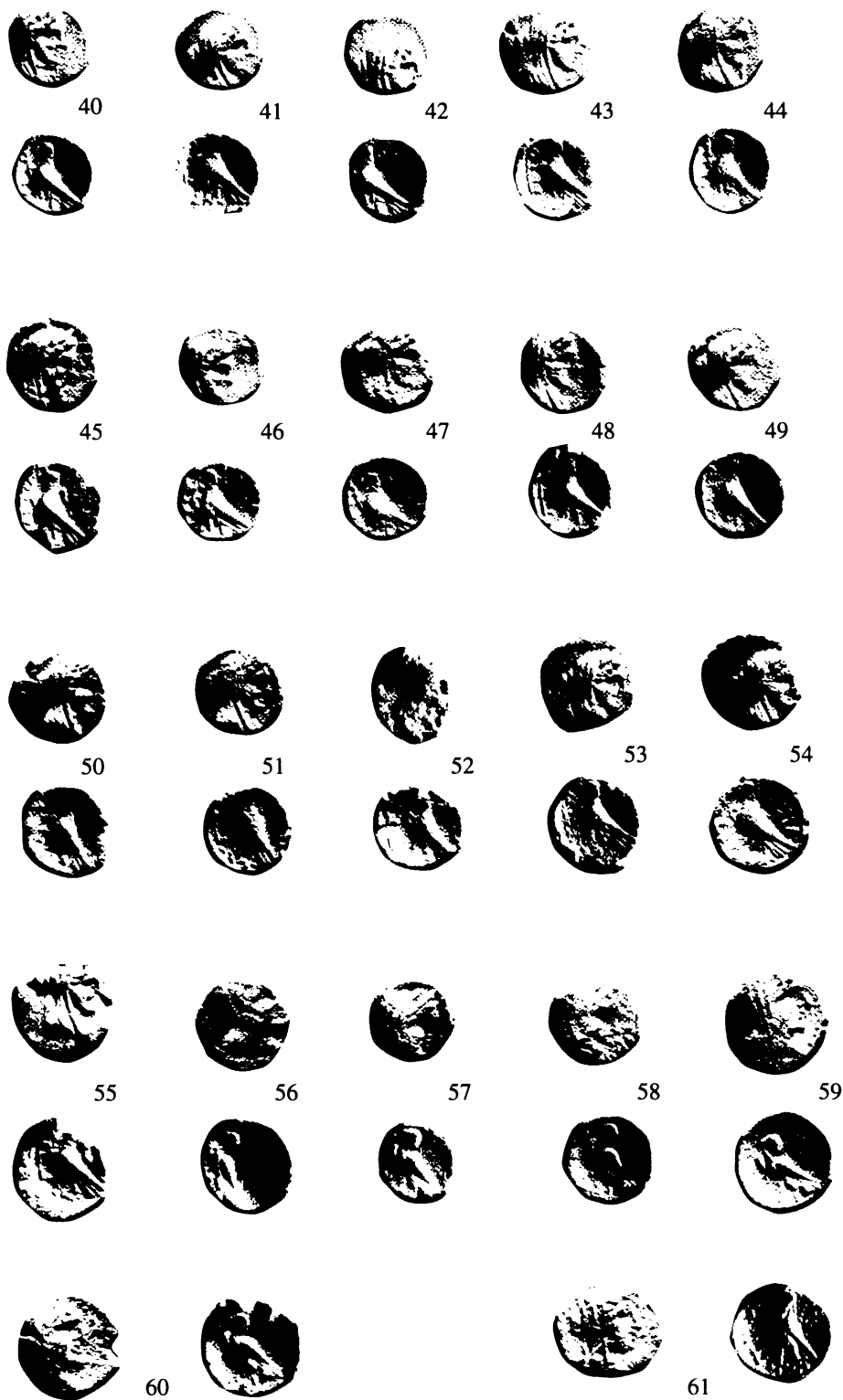


Hoard of Bronze Coins of Ptolemy Ceraunus

Plate 10



Hoard of Bronze Coins of Ptolemy Ceraunus



Hoard of Bronze Coins of Ptolemy Ceraunus

Plate 12



1



2



3



4

Large Ptolemaic Bronzes



5



6



7



8



Large Ptolemaic Bronzes

Plate 14



9



10

11

12



13

Large Ptolemaic Bronzes



14



15



16



17



18



Large Ptolemaic Bronzes

Plate 16



19



20



21



22

Large Ptolemaic Bronzes



23



24



25



26



27



28



Large Ptolemaic Bronzes

Plate 18

I. Coinage of Antiochus III in Bactria

AI KHANOUM

Antiochus II



G1



G3



Counterstamped



1



2



Antiochus III



3



4



NT I o X o Y

Euthydemus



5



APAMEA

Antiochus III



6



7

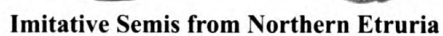
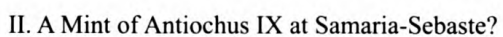


Three Seleucid Notes

II. A Unique Tetradrachm of Demetrius II Nikator



Three Seleucid Notes



REVERSES:

I. Forum (F)



F1



F2



F3



F4



F5



F6



F7



F8



F9



F10

II. Basilica Ulpia (B)



B1



B2



B3



B4



B5

III. Via Traiana (V)



V1



V2

IV. Trajan Senior (P)



P1



P2



P3



P4



P5



P6



P7

V. Deified Nerva and Trajan Senior (N)



N1



N2



N3



N4



N5



N6

Trajan's COS VI Gold

Plate 22

VI. Mars Victor (M)



M1

VII. Jupiter Conservator (J)



J1



J2



J3



J4



J5



J6



J7



J8



J9



J10

VIII. Legionary Eagle and Standards (S)



S1



S2



S3



S4



S5



S6



S7



S8



S9

IX. Bonus Eventus standing alone (BE)



BE1



BE2



BE3



BE4



BE5



BE6



BE7



BE8



BE9



BE10

Trajan's COS VI Gold

X. Bonus Eventus with Altar (BEA)



BEA1



BEA2



BEA3

XI. Trajan's Column (C)



C1



C2



C3



C4

XII. Fortuna Redux (FR)



FR1



FR2

XIII. Profectio Augusti (PR)



PR1

XIV. Rex Parthus (RP)



RP1

XV. Equus Traianus (ET)



ET1

Forgery 1



Forgery 2



OBVERSES

a) Bust of Trajan laur., r., dr. and cuir.



a1



a2



a3



a4



a5

Trajan's COS VI Gold

Plate 24



a6



a7



a8



a9



a10



a11



a12



a13



a14



a15



a16



a17



a18



a19



a20



a21



a22



a23



a24



a25



a26



a27



a28



a29



a30



a31



a32



a33



a34



a35



a36



a37



a38

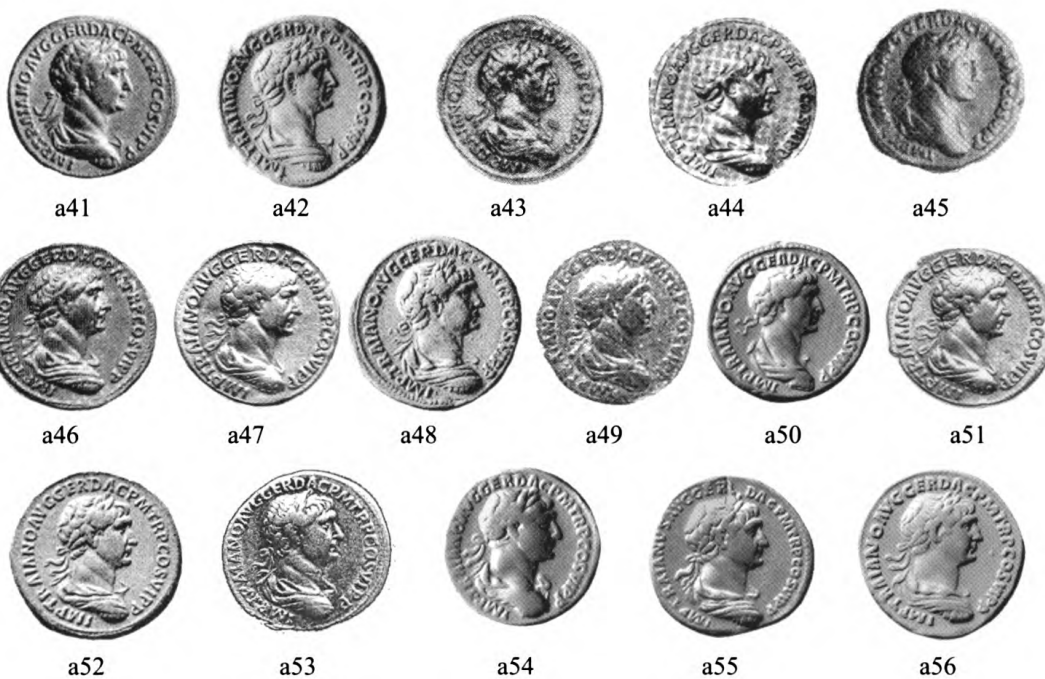


a39

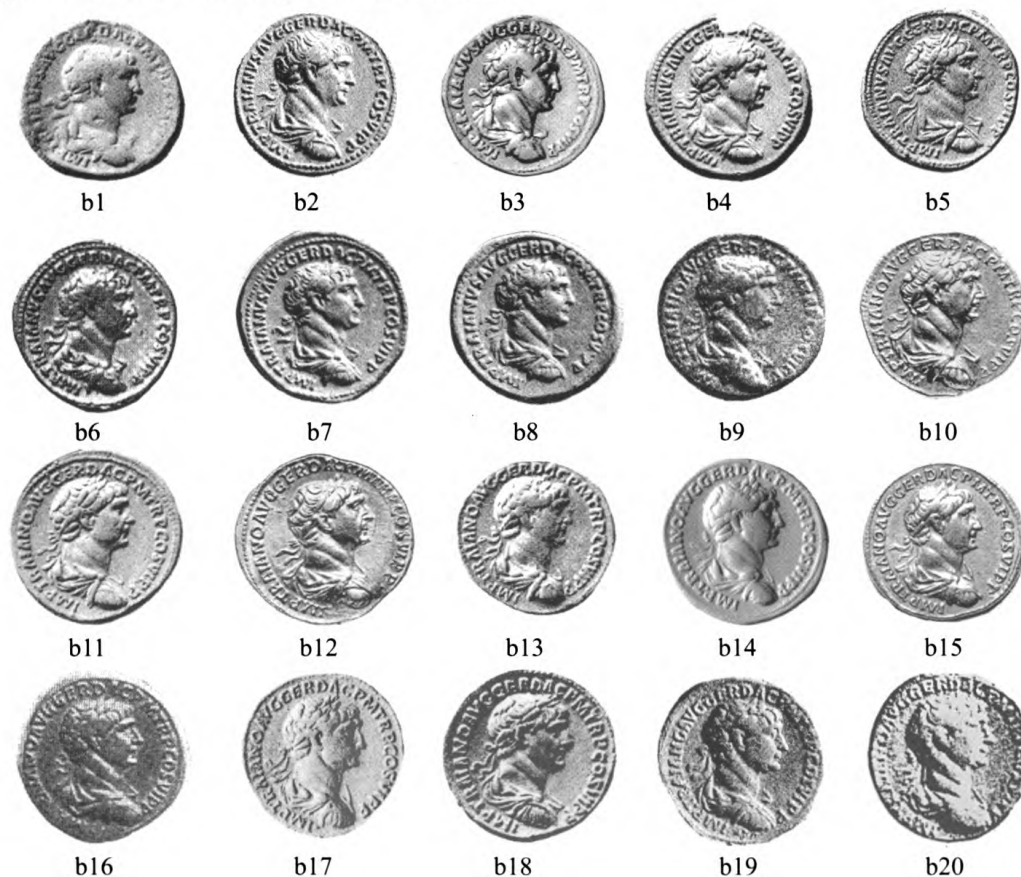


a40

Trajan's COS VI Gold



b) Bust laur., r., dr. with clasp on shoulder and cuir.



Trajan's COS VI Gold

Plate 26

c) Bust laur., r., dr.



d) Bust laur., r., dr. and cuir., with small globe beneath (quite rare)

e) Bust laur., r., bare except for aegis at front (only one example)



Trajan's COS VI Gold



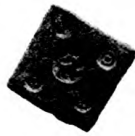
'Abbasid Revolution Hoard



Silver Double Tram of Gosdantin I



A



B



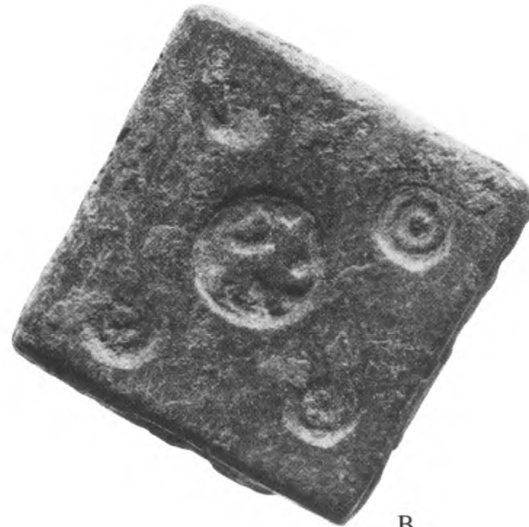
C



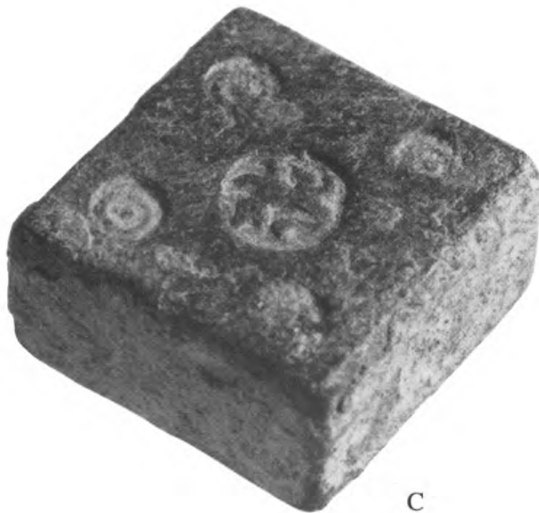
D
1:1



A



B



C



D

4:1

Mamluk Bronze Weight

Plate 28



A



B

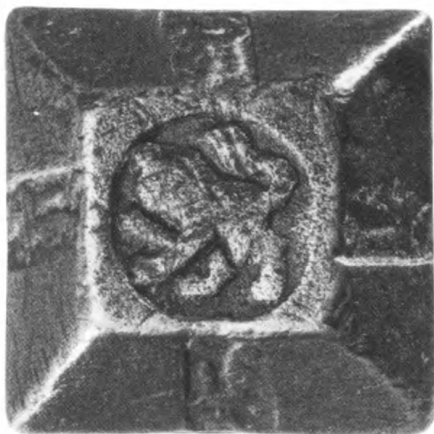


C



D

1:1



A



B



C



D

4:1

Mamluk Bronze Weight



1928.20.2



1928.20.3



1948.33.1



1948.33.2



1948.33.3



1921.136.2



1921.136.3



1921.136.1

Private Gold Coinage

Plate 30



1921.136.4



1921.136.5



1921.136.6



1921.136.7



1921.136.8



1921.136.9



1953.113.1

Private Gold Coinage

Greek



Acquisitions for 1999

Plate 32

Roman and Byzantine



Islamic, South Asian, and East Asian





Medieval



Medals and Decorations (not to scale)



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Modern, Latin American, and US

